

4.3.4 XRP-II (Inventory, Logistics and Maintenance {ILM} Manager)

ILM Manager, or just ILM, helps the M&O staffs at the DAACs, EOC, and SMC maintain records that describe all inventory components, as well as their assembly structures, repair histories, and locations. The system keeps chronological histories (a record of the transactions) of receipt, installation, relocation, transfer, archiving and relocation of inventory items. ILM is used by the Procurement, Property Management, Maintenance, and Logistics teams in managing the tangible property of NASA's EOSDIS project.

ILM is a heavily customized application of the commercially available manufacturing management system, XRP-II, particularly its Product Information, Inventory Management, Purchasing Management, and Work Order Processing modules. The customizations adapt the product to the ILS processes used for ECS. Since XRP-II supports managing ECS baseline data too, ILS operators have access to the Baseline Manager's data query screens and reports as well (see Section 4.3.3).

XRP-II is a legacy-based application. It has a character-based (non-GUI) system of menus and data entry screens (so it can support dumb terminals) and an embedded COTS database (UNIFY). The vendor has tailored many of the original displays, making them ECS-specific, and has added and changed numerous functions to facilitate ECS property and maintenance management. The system provides a transaction-oriented environment for data input and modification. While an operator is logged into the XRP-II program, he is engaged in a database session.

ILM menus and screens take into account how business rules and logistics concepts are applied on the ECS project. This document does not address these considerations in detail, but the following general introduction should help.

Each inventory item is identified by a unique Equipment Inventory Number (EIN). In the case of hardware items, an EIN corresponds to a silver sticker affixed to the item. The most significant relationship maintained among inventory items is EIN structure. EIN structure is ILM's implementation of XRP-II's product structure; that is, the parent-component pairings that define the ingredients -- or bill of material -- for an assembly. Product structures have active and inactive dates that establish the timeframe during which the pairing is in effect. Sections 1.6.2 and 4.1 of the *XRP-II Product Information Manual* discuss product structures in more detail. For tracking and auditing purposes, inventory items -- especially hardware -- get allocated to ECS "parent" machines, and some of the items are shipped to sites and installed. Others such as consumables are issued but not installed. After a period, some items may be transferred to other locations or relocated for use with other parent machines. Items are archived when no longer needed or serviceable.

Table 4.3.4-1 summarizes the operator functions that XRP-II supports. The sections that follow present how to use XRP-II features that were customized for ECS inventory, logistics, and maintenance management. Refer to the following manuals for an understanding of the original XRP-II product and for descriptions of functions and features that were not customized:

- *XRP-II System Reference Manual* - presents an overview of XRP-II and describes system-related functions associated with using it.

- *XRP-II Product Information Manual* - presents a full description of XRP-II's product information module in context of XRP-II's integrated set of manufacturing-oriented applications.
- *XRP-II Datalook/Datarite Reference Manual* - presents a technical reference for the on screen database editor (DATALOOK) and report generator (DATARITE) incorporated in XRP-II and used to create custom screens and reports.
- *XRP-II Tools, Techniques, and Conventions Manual* - presents a description of methods and utilities an XRP-II support engineer would use to perform low-level maintenance on XRP-II's database, screens, and reports.
- *UNIFY Developer's Reference* - presents a guide with examples for using UNIFY's tools to develop database applications. It also describes many UNIFY messages.
- *UNIFY Direct HLI Programmer's Manual* - presents a technical reference for programmers of UNIFY RDBMS applications and contains a summary of UNIFY's error log file and common error messages.
- *UNIFY Developer's Tutorial* - a practical tutorial and functional reference for using UNIFY.
- *ACCELL Publication Package* - describes how to install ACCELL.
- *ACCELL Release Notes* - describes software changes that occurred after the ACCELL and UNIFY manuals were printed.

Section 4.3.3 XRP-II (Baseline Manager) also discusses XRP-II. Readers not familiar with XRP-II should read through that section, including Sections 4.3.3.2.11 (System Utilities) and 4.3.3.2.12 (System Tools) which discuss functions needed and used to support ILM.

Refer to EOSDIS and ECS configuration management plans and procedures for definitions of such terms as baseline, configuration item, control item, and configured article used in this document.

Table 4.3.4-1. Common ECS Operator Functions Performed with ILM

Operating Function	Character-based User Interface	Description	When and Why to Use
ILM function selection	ILM Main Menu from ECS Management System Main Menu	Start XRP-II and navigate to appropriate screens.	To access any of ILM functions for property management, inventory ordering, purchase order processing, property maintenance, or system management configuration.
Property Management	EIN Menu, EIN Transactions, or ILM Report Menu from ILM Main Menu	Maintain information about accountable property items, their product structures, and inter-relationships.	To maintain information that specifies the identity, source, location, transfer, relocation, and installation of procured inventory items.
Inventory Ordering	Inventory Ordering Menu from ILM Main Menu	Define and manage ordering information for the inventory items.	To establish order points and to monitor inventory levels.
Purchase Order Processing	PO / Receiving Menu from ILM Main Menu	Purchase order preparation and monitoring receipt of inventory items.	To generate purchase orders and record receipt of inventory.
Property Maintenance	Maintenance Menu from ILM Main Menu	Manage information for required repairs and preventive maintenance.	To predefine and monitor scheduled maintenance activities
License Management	License Menu from ILM Main Menu	Manage entitlements, licenses, and license allocations for licensed COTS software.	To track the receipt, movement, and consumption of software licenses and their associated rights-to-use.
ILM Configuration	ILM Master Menu from ILM Main Menu	Manage configuration information for ILM.	To define parameters required to run ILM, maintain user information, and export and import ILM data.

4.3.4.1 Quick Start Using XRP-II (ILM)

ILM was designed to assist in the tracking of government property items, for each site individually and in a consolidated manner for the SMC. It is a character-based, menu-driven system whose user interface was inherited from the XRP-II product. It employs screens for entering data, processing transactions, and generating reports. Menus are used for navigating to the screens. Figure 4.3.4-1 depicts the hierarchy of menus and screens for ILM. XRP-II provides the capability to modify screens and menus and to develop new, custom reports to meet changing requirements.

All XRP-II menus are similar in appearance and function the same way. Only the titles and selections vary. Selections may vary for different operators using the same menu. This happens if each has different permissions.

Data is entered via the keyboard. On data screens, fields are usually traversed from left to right, then row by row. Labels for fields whose values can be modified are displayed in upper case. The database is updated at the time a field's value is changed, and records of changes are written to transaction logs.

Most data entry screens have form and table views for displaying data records but some have neither view, having been designed solely to initiate processes. Form views offer full screen layouts of a data record's fields, whereas table views offer rows of records in a window that is panned to see columns of fields. Some table views have fewer fields than their corresponding form views, either by design or to accommodate system limitations. Screens are usually displayed in INQUIRY mode, which precludes changing any values. Operators must enter ADD, INSERT, DELETE, or MODIFY mode in order to update the database.

XRP-II menus and screens provide simple and quick one or two keystroke commands that support various navigation, data entry, and processing functions. Functions are screen-dependent, so XRP-II uses a menu near the bottom on each display to list which commands are available. On data entry screens, the menu differs according to mode. The list for INQUIRY mode has three parts due to its size. (Using the **M**ore command cycles through them). Table 4.3.4-2 summarizes the "bottom-line" commands used in ILM. More detailed descriptions can be found in the *XRP-II System Reference Manual*, Section 2.6, and the other ILM-related XRP manuals such as the *XRP-II Work Order Processing Manual*.

XRP-II also provides online help, which can be entered by pressing <F1>. Help superimposes on the display a textual description of a field, screen, or command. Help is controlled using its own set of bottom-line commands. If no help is available for the topic selected, a "No help for ..." message appears on the status (last) line of the display. The Help command has to be exited by using the **Q**uit command or <F3>.

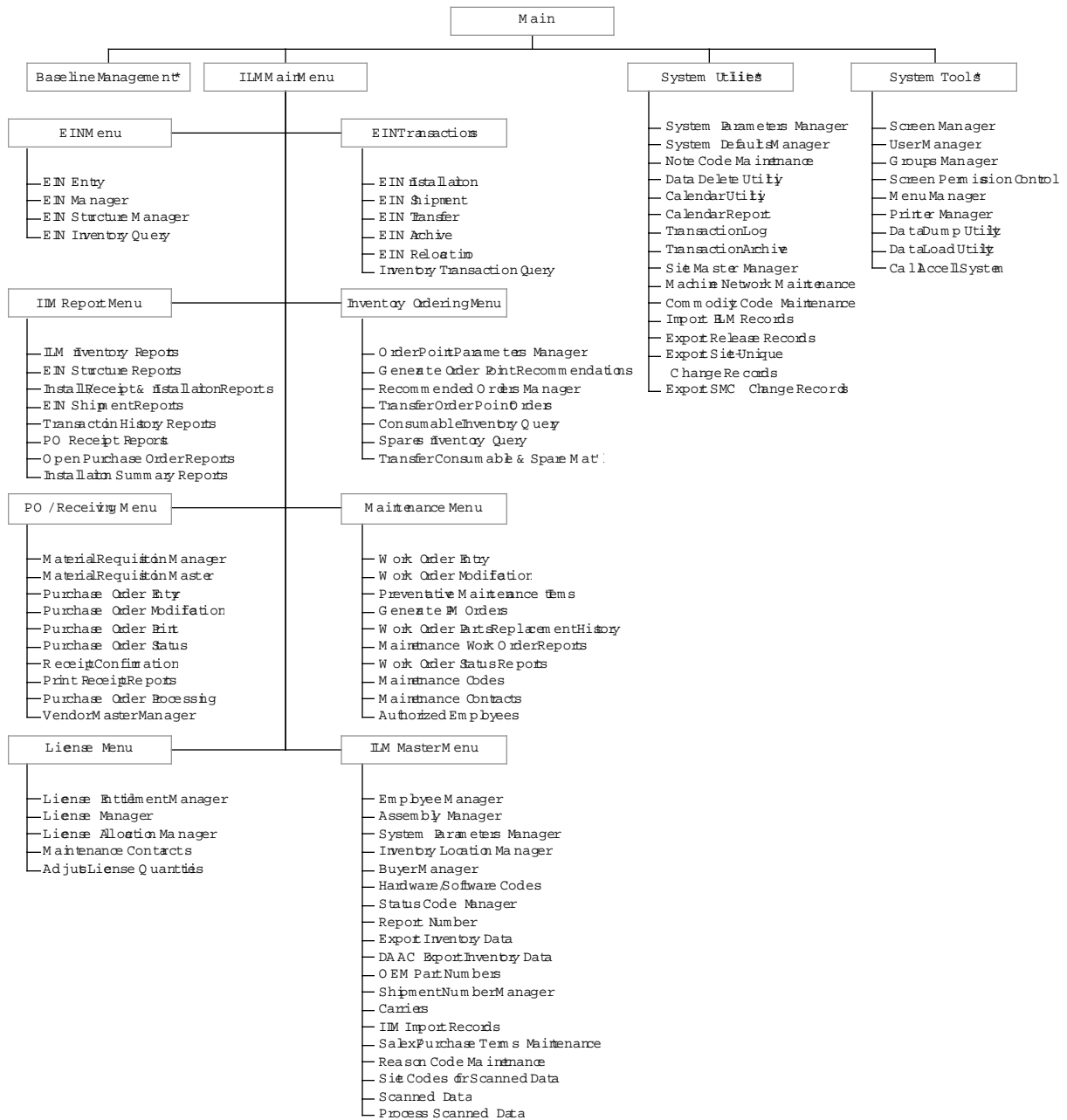


Figure 4.3.4-1. ECS ILM Management System Menu Structure

- The Baseline Management, System Utilities, and System Tools menus are discussed in Section 4.3.3.2.

Table 4.3.4-2. XRP-II's Bottom Line Commands for ILM (1 of 3)

Commands	Description
Commands used with ILM menus	
<F1>	Displays a description for the highlighted option.
<F3>	Moves back to the previous menu.
<F5>	Selects the highlighted option.
<F8>	Exit XRP-II.
Commands used with ILM screens	
<F1>	Invokes online help and displays a submenu for identifying the help target. Same as the H elp command.
<F2>	Clears the value from the field.
<F3>	Exits the screen or function. Same as the Q uit command.
<F5>	Starts a sort, select, find, or ad hoc report function after entry of parameters is completed.
<F7>	Copies data into or from a block of text.
<F9>	Tags and returns a value when executing a zoom command.
.Adjust_qtys	Updates how many of a license entitlement's node and user rights-to-use are allocated and remaining.
.Cartons	Invokes the cartons page on the EIN Shipment screen so the number and sizes of cartons in a shipment can be recorded.
.Entitlements	Activates an items page for identifying the license entitlements associated with a specific software license.
.Licenses	Activates an items page for identifying the software licenses associated with a specific license entitlement.
.Process_Changes	Updates property records based on parameters specified in the line items for a Maintenance Work Order.
/Add	Invokes ADD mode so new records can be added (created) in the database. New records are placed after the current record.
/Copy	Copies values from "tagged" fields to corresponding fields in other records. If no values are tagged, copies -- to the field in which the cursor resides -- the value from the corresponding field in the preceding record.
/Delete	Deletes the displayed record from the database.
/Insert	Invokes ADD mode such that new records can be inserted (created) in the database. New records are placed ahead of the current record.
/Modify	Invokes MODIFY mode so an existing database record can be updated.
/Note	Enables free-form text to be associated with a data entry screen for a user.
/Report	Invokes ad hoc report processing for the set of records currently selected on a screen.
/Sort	Allows the current set of selected records to be sorted according to operator-specified sort criteria.
/Zoom	Allows a set of records related to the current record to be displayed. Tagging any field in one of those records causes a value from that record to be returned and entered in the field at which the command was invoked.

Table 4.3.4-2. XRP-II's Bottom Line Commands for ILM (2 of 3)

Commands	Description
Addr	Invokes the vendor address maintenance screen so multiple addresses for a vendor can be recorded.
Bom	Invokes a screen to display the Bill of Material (i.e., list of first-level components) for an item, if any.
Changes	Displays the record of changes logged for a purchase order line item.
Check	Validates certain data entered for a batch of inventory transactions prior to the transactions being processed.
Copy-bill	Adds to an EIN's Bill of Material (BOM) the BOM from another.
Copy-dates	Copies active and inactive dates -- defined for an EIN's structure in its structure manager record -- into the product structure records for the EIN's children.
Copyein	Creates a new item by copying all the fields except the EIN Number from another item.
Copypart	Creates a new item by copying all the fields except the EIN Number from another item.
Duplicate	Creates copies of a purchase order line item to support multiple deliveries on different dates.
Execute	Starts the processing of a major, supporting function attached to the screen.
Find	Locates and displays the first record having field values the operator specifies. Repeating the Find command without changing the search criteria locates the next record that qualifies.
Go	Locates and displays a record having a specified sequence number. The format is "ng", where <i>n</i> is the number.
Help	Invokes online help and displays a submenu for identifying the help target.
Items	Invokes the items page of a data entry screen so a set of related records can be attached to the current record. Examples of related records include the line items for a purchase order and the components of a parent EIN.
Items_Addl	Invokes the items page of the License Allocation data screen so allocated licenses can be mapped to backup/redundant servers without being included in computations of rights-to-use consumed.
Items_Allocation	Activates an items page that lists the host machines and sites to which a license has been allocated. The license's rights-to-use must have first been mapped to at least one entitlement before the license can be allocated.
Justify	Used with table view, places the column the cursor is in next to the column(s) of record key data at the left edge of the screen.
Left	Shifts the data window to the left for displays that cannot fit all fields in one window.
More	Displays more bottom-line commands. In general, XRP-II provides three menus of bottom-line commands for screens, since all commands available to a screen cannot fit on one line. This command cycles through these menus.
Next	Moves the display "forward" to the next record (in form view) or next page of records (in table view).
Prior	Moves the display "back" to the prior record (in form view) or prior page of records (in table view).

Table 4.3.4-2. XRP-II's Bottom Line Commands for ILM (3 of 3)

Commands	Description
Quit	Exits the current screen or function. (This command is not available when in ADD, INSERT, or MODIFY modes, as it would be mistaken for a character being entered in a field.)
Right	Shifts the data window to the right for displays that cannot fit all fields in one window.
Select	Invokes query-by-example record filtering and displays a submenu for specifying the criteria to be used. See <i>XRP-II System Reference Manual</i>
Tag	Identifies a specific record and field whose value is to be used when adding new records or copying data. Tagged values are highlighted on the screen.
Untag	Removes the "Tag" from all field on the screen.
View	Toggles between "form" or record display and "table" or list display.
Where	Invokes a screen to display the first-level parents or assemblies having the EIN-controlled item as a component.
Write	Saves the current record to a file designated by the operator.
Commands used in ADD, INSERT, and MODIFY modes	
<F1>	Invokes online help and displays a submenu for identifying the help target.
<F2>	Erases the character string in the field.
<F3>	Exits the mode.
<F4>	Switches among typeover, insert, and replace modes for data entry.
<F6>	Enters the default value for the field.
Commands used in DELETE mode	
H	Invokes online help and displays instructions on how to use the Delete command.
L	Invokes the line-by-line method for deleting records.
n	Specifies the number of records to delete starting with the current record.
Q	Exits the mode.
Commands used with online help	
C	Display help for bottom-line commands available to the screen. Commands are listed on the bottom-line menu, and the More command can be used to cycle through them. Type any highlighted keys to display the help text for those keys.
F	Display help for the screen field on which the cursor has landed.
Q	Exit online help.
S	Display help for the screen.

When entering data in XRP-II screens, operators should keep the following in mind:

- XRP-II is case sensitive. It interprets data exactly as it is entered, taking the case of your input string into account.
- Each menu and screen has a set of "bottom line" commands, so named because the command menu appears in a menu at the lower part of the display. The menu uses boldface to indicate which keystroke(s) invokes each command.
- The record counters Last and Current appear on the topmost line of screens that display multiple data records. Last corresponds to the total number of records in the display; while Current indicates which of those records the cursor is on.

- Most screens are presented in INQUIRY (i.e., query) mode. Operators must enter ADD or INSERT mode in order to add new records, MODIFY mode to change existing values, and DELETE mode to remove one or more records. Exit back to INQUIRY mode by pressing <F3>.
- After entering a new value in a data field, operators must move the screen's cursor from the field in order to save the value in the database. This allows a change to be cancelled or revised before it is stored. The cursor can be moved by pressing the <ENTER>, <TAB>, or any of the cursor keys.
- Since XRP-II has a character-based user interface (not GUI), navigation, item selection, and cursor movement is handled using the keyboard. A terminal's mouse has limited utility. There is no placing the mouse pointer on an item and double clicking, and there is no dragging and dropping. However, your windowing system may allow you to use your mouse to cut and paste.
- The /Zoom command often appears at the right of the bottom-line menu when the cursor is at a field having corresponding data in a related database table. This indicates that a ZOOM screen is available to help you select the data value to enter. To operate a ZOOM screen do the following:
 - Enter /Z in as the first two characters in the field. A pick list will appear in a box with your cursor positioned at the top of the list.
 - To select an item, use appropriate keys and available commands to move the cursor to the desired record, then press <T> for Tag. XRP-II will highlight the value you've selected.
 - Press <Q> or <F3> to return to the data entry screen. Your selection now appears in the data entry field.

It is important to note that the relational database management system XRP-II uses, UNIFY, does not support rules requiring entries in specific fields. ILM attempts some enforcement via the data entry screens, either by establishing default values where feasible when new records are created, or by blocking an operator from advancing the cursor past a null field when in ADD, INSERT, or MODIFY modes. However, database updates can occur in ways that bypass these mechanisms, so operators must ensure required data is entered.

4.3.4.1.1 Invoking XRP-II (ILM) from the Command Line

In order to use ILM, an operator must be logged in on XRP's host server and his userid registered in XRP with appropriate privileges. The userid must also be a member of the Unix file system group owning the XRP-II files, which is typically "xrp".

To run ILM from the command line prompt, type either:

a) **<principal dir name>/scripts/ilmusr** [**<terminal_id>**] [**<terminal_type>**]

where principal dir name is the directory at which XRP-II is accessed
(nominally, /usr/ecs/OPS/COTS/xrp)

or

b) **ilmusr** [**<terminal_id>**] [**<terminal_type>**]

if XRP's scripts directory has been added to your path.

The “terminal_id” argument identifies the IP address or host name at which XRP-II menus and screens are to be displayed. The address, which is only needed only in an X-windows environment, must not include a “:0.0” suffix. XRP-II will prompt the operator for an address if the argument is not provided. The “terminal_type” argument specifies terminal configurations (e.g., ansi, xterm, ddtterm, and vt100). If the argument is not present, XRP-II checks the TERM environment variable to determine the terminal type and whether or not the product supports it.

The “ilmusr” script determines the operator’s terminal type, prompts for a terminal id if necessary, and reads the ILM configuration file to establish the right operating environment. The script then starts XRP-II, passing it the operator’s userid which it obtains from the system.

Upon invoking XRP-II, ECS operators see a menu screen, which one depending on the “entry menu” and “screen group” the operator was assigned. Assignments are based on the operator’s role, and they affect the screens and functions the operator can invoke. Made by someone with XRP administrator privileges, assignments are discussed in the Baseline Manager part of this document (see Sections 4.3.3.2.12.2 - 4.3.3.2.12.4). The following are ILM-related roles XRP-II is deployed pre-configured to support:

- ilmadmin - full privileges to all operator and system administrator functions within ILM;
- ilmuser - all ILM operator privileges only;
- ilmlog - logistics management data update privileges only;
- ilmmaint - maintenance management data update privileges for central ILS managers;
- ilmadmnd - full privileges to all operator and system administrator functions within ILM for a site’s local maintenance coordinator;
- ilmmntd - maintenance management data update privileges for a site’s local maintenance coordinator;
- ilmquery - ILM data query privileges only;
- ilmupdt - (Reserved);
- licuser - license management data update privileges for software license administrators;
- xrpadmin - all privileges (both ILM- and BLM-related) for whomever is responsible for sustaining the application.

The sections below discuss all ILM’s menus and screens. The order of presentation follows the menu hierarchy. Read the XRP-II System Reference Manual to familiarize yourself with using the menus and screens before proceeding to the material in Section 4.3.4.2.

4.3.4.2 XRP-II Main Screen

The initial display an operator sees upon invoking XRP-II is typically the ECS Management System Main Menu (Figure 4.3.4-2), or just Main Menu for short. It helps operators navigate to the following submenus:

- Baseline Management Menu – provides access to XRP-II functions for maintaining control item and bill of material information;
- ILM Main Menu – provides access to XRP-II functions for maintaining inventory, logistics, and maintenance information;

- System Utilities Menu – provides access to XRP-II functions for maintaining system information that spans functional domains;
- System Tools Menu – provides access to aids for registering XRP-II users, assigning permission, customizing data entry screens and menus, and performing general-purpose database dumps and loads.

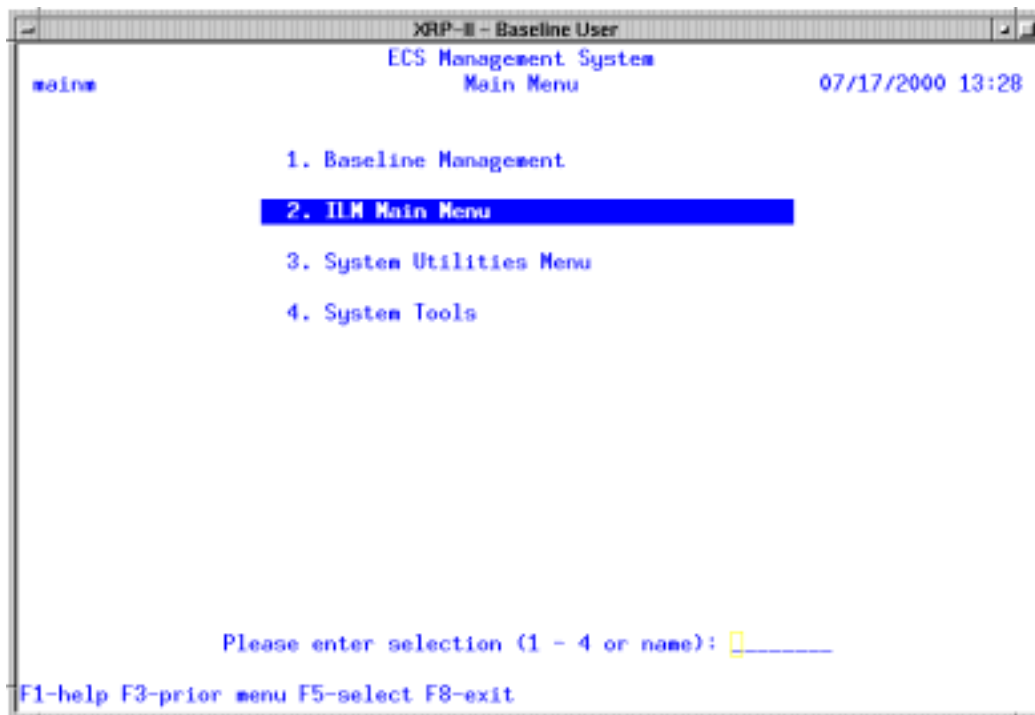


Figure 4.3.4-2. ECS Management System Main Menu

Operators select from XRP-II menus either by typing an option number and pressing <Enter>, or by moving the cursor to the option to highlight it then pressing <Enter> or <F5>. For the experienced operator, XRP-II provides a shortcut that bypasses the menu hierarchy. Each XRP-II menu and screen is identified by a name at its top left corner. Operators familiar with these names can just type a name at any menu to navigate directly to the desired display.

Note: While navigating by name bypasses the menu hierarchy, it does not circumvent access restrictions. That is, operators cannot access menus and screens for which they have no permissions.

The submenu ILM operators will most often select is the ILM Main Menu (Figure 4.3.4-3). It helps them navigate to the following, additional submenus that contain screens grouped according to major operating function:

- EIN Menu - for managing the catalog of EIN-controlled items;
- EIN Transactions - for processing transactions about EIN installations, shipments, transfers, and relocations;

- ILM Report Menu - for producing pre-defined reports available to all operators;
- Inventory Ordering Menu - for managing consumable items and spare parts;
- PO / Receiving Menu - for processing procurement requisitions, orders, and receipts;
- Maintenance Menu - for managing maintenance actions and data;
- License Menu – for managing licenses for commercial-off-the-shelf (COTS) software;
- ILM Master Menu - for managing ILM parameters and reference information.

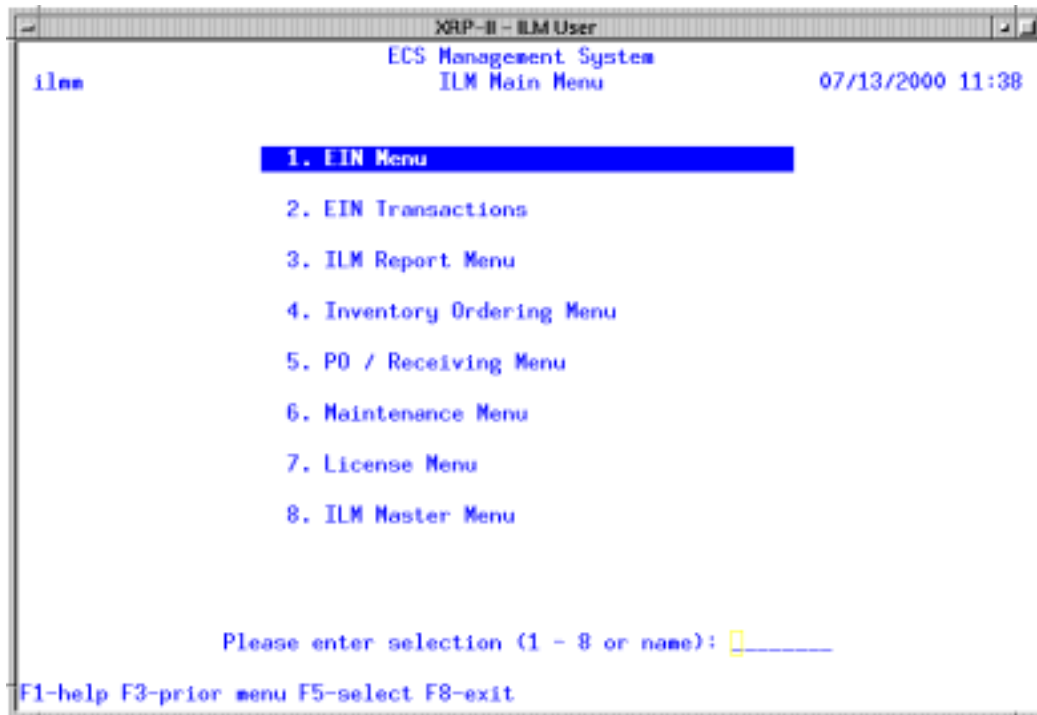


Figure 4.3.4-3. ILM Main Menu

The sections that follow focus on the functions and features that are part of the ILM Main Menu. Other ECS Management Main Menu selections were discussed in the XPR-II (Baseline Manager) section of this document and are not repeated here.

4.3.4.2.1 EIN Menu

Options provided on this menu (Figure 4.3.4-4) allow the operator to navigate to a set of screens for managing and accessing information about EIN-controlled items. These include:

- EIN Entry – for adding records about new, EIN-controlled inventory items;
- EIN Manager (EDF) – for updating the data describing any EIN in the system;
- EIN Structure Manager (EDF) – for manually associating EINs with a system machine (i.e., its parent EIN)
- EIN Manager – for browsing data describing EINs at the local site.

- EIN Structure Manager – for browsing EIN structures for items at the local site;
- EIN Inventory Query – for browsing EIN records;

The following subsections describe these screens.

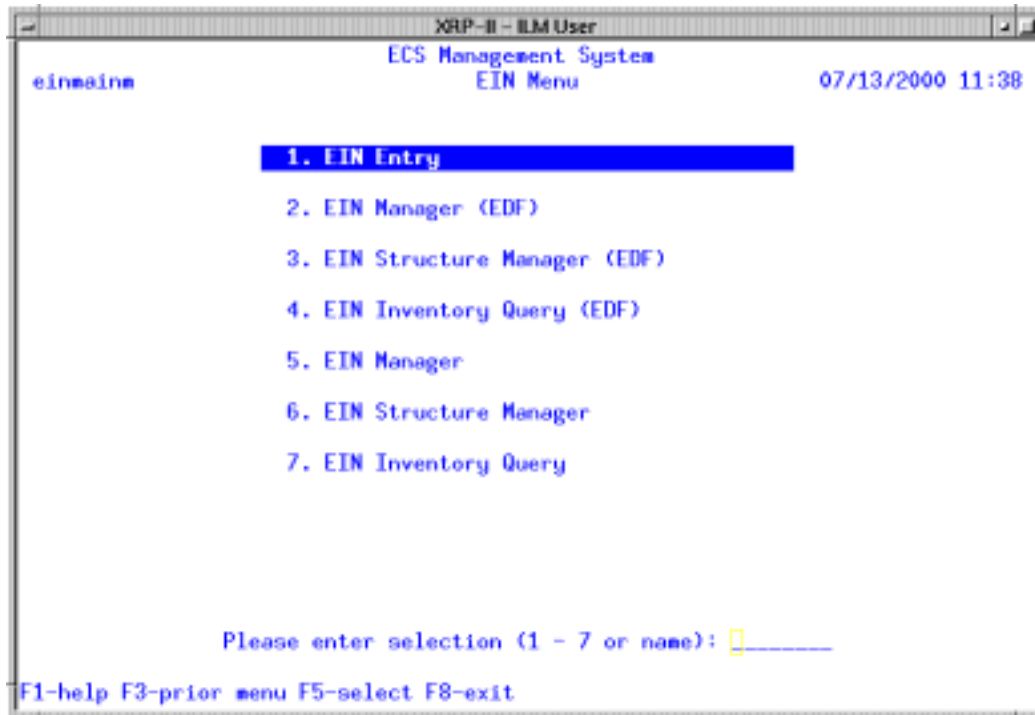


Figure 4.3.4-4. EIN Menu

4.3.4.2.1.1 EIN Entry Screen

The EIN Entry screen (Figure 4.3.4-5) is designed to enter records identifying EIN-controlled inventory items into the database. It is presented to the operator automatically when XRP-II's Receipt Confirmation screen is used for entering items at the receiving dock. It can also be invoked from the EIN Menu to allow entry of items outside the receiving process. This screen is presented to the operator in ADD mode. Records for all EIN-controlled inventory items – especially consumables -- should be created through this screen.

The screenshot shows a terminal window titled "einent EIN Entry". The window has a status bar at the top right indicating "Last: 1" and "Current: 1". The main area displays a form with two columns of fields. The left column contains fields for item identification and tracking, while the right column contains fields for maintenance and cost information. At the bottom, there is a menu bar with options: "Exit", "Prior", "View", "Find", "Go", "Select", "Sort", "Note", "Copy", "Print", "Save", "More", "Help", "More", and "Quit".

Field	Value
EIN	00018018
ICS NAME	IN STOCK
SERIAL NUMBER	4035A01846
DEM PART NUMBER	900128-01
DEM DESCRIPTION	Keyboard
MOUSE CODE	R
MOD/VER	
VENDOR	SGI
SOFTWARE LIC NUM	
MAINT VENDOR	SGI
Trans Code	03
MSA CONTRACT	W55-60000
PO NUMBER	CCW0005817
LOCATION	EDC
ROOM	COM 2
ADMIT DATE	xx/xx/xx
CONTROL ITEM ID	
WARRANTY EXP DATE	12/31/98
SUFFIX	
POST ID	
HARDWARE	
CFG	SGI
MAN YEAR	2000
RECEIVE DATE	03/10/97
MAINT CONTRACT	CCW4581
STATUS CODE	R
RELEASE CODE	
UNIT COST	0.00
BUILDING	EROS-D
USER	205
GFE NUM	
DNA #	

Figure 4.3.4-5. EIN Entry CHUI

Table 4.3.4-3 describes the fields on EIN Entry screen.

Table 4.3.4-3. EIN Entry Field Descriptions (1 of 3)

Field Name	Data Type	Size	Entry	Description
EIN	String	20	required	Identifier for an EIN-controlled inventory item. This field is for the entry of the actual silver tag numbers attached to each item. If an item must be controlled by ILM but does not receive a silver tag, operators can press RETURN at the field prompt to have the system assign the next sequential number available based on the value for Last EIN in the System Parameters file. This number, whether entered or assigned, must be used for all machine configuration operations as well as reporting and maintenance functions.
ECS NAME	String	30	optional	Name of the machine with which the item is associated.
SUFFIX	String	3	optional	Code which when used as a suffix to ECS Name forms an identifier (RMA ID) for equipment subject to RMA reporting.
SERIAL NUMBER	String	30	optional	Serial number of the item.
HOSTID	String	20	optional	Hexadecimal identifier of the host machine obtained when the "hostid" Unix shell command is run.
OEM PART NUMBER	String	34	optional	Manufacturer's or vendor's part number. The operator may zoom to the OEM Parts table and choose the number, if it had been entered there previously. (See the section on OEM Part Numbers.)
OEM DESCRIPTION	String	40	optional	Manufacturer's or vendor's description for the item. This field reflects the description of the OEM PART NUMBER entered in the field above, but provides the ability for the operator to modify it in the EIN file.
HDWSFT CODE	String	10	optional	Code for classifying inventory items by type. The operator may zoom to the Hardware/Software Codes file and choose the code, if it had been entered there previously. (See the Hardware/Software Codes section.).
MOD/VER	String	24	optional	Model or Version of the item. If the operator had chosen a known OEM Part, this field will be written with the information from that file.
MFG	String	6	optional	Code used for the manufacturer.
VENDOR	String	6	optional	Code for the vendor from whom the item was purchased. The operator may zoom to the Vendor data file and pick the desired code if it had been entered there previously. (See the Vendor Master Manager section.).

Table 4.3.4-3. EIN Entry Field Descriptions (2 of 3)

Field Name	Data Type	Size	Entry	Description
MANF YEAR	String	4	optional	Year (4-digit) the item was manufactured. This field defaults to the year specified in the systems parameter data file. (See the System Parameters Manager section.)
SOFTWARE LIC NUM	String	10	optional	License number for a software type license item.
RECEIVE DATE	String	8	optional	Date item was received from vendor.
MAINT VENDOR	String	6	optional	Code for the item's maintenance vendor. The operator may zoom to the Vendor data file and choose the appropriate code if it had been entered there previously. (See the Vendor Master Manager section.)
MAINT CONTRACT	String	15	optional	Identifier for the Maintenance Contract under which the item is covered. The operator may zoom to the Contract data file and choose the desired contract number if it had been entered there previously. (See the Maintenance Contracts section.)
TRAN CODE	Numeric	3	system-supplied	Code designating the transaction type. The value will always be set to '03' and is not modifiable by the operator.
STATUS CODE	String	1	optional	Code that designates the status of the item. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived;
NASA CONTRACT	String	11	optional	Identifier designating the government contract used for this item. This information is automatically assigned and can not be changed.
RELEASE CODE	String	10	optional	Code for distinguishing the release status of the item.
PO NUMBER	String	10	optional	Identifier of the purchase order against which the item was received. The system sets the value during Receipt Confirmation processing.
UNIT COST	Numeric	10	optional	Price of each item.
LOCATION	String	8	optional	Identifier that designates an inventory location. The operator may zoom to the Inventory Locations table and choose the code, if it had been entered there previously. (See Inventory Location Manager.) The system sets the value during all EIN transaction processing. (See the EIN Transactions section.)
BUILDING	String	6	optional	Identifier for the building where the item can be found.
ROOM	String	6	optional	Identifier for the room where the item can be found.

Table 4.3.4-3. EIN Entry Field Descriptions (3 of 3)

Field Name	Data Type	Size	Entry	Description
USER	String	8	optional	Code for the person who has the item. The operator may zoom to the Employee table and choose the code, if it had been entered there previously. (See the Employee Maintenance section).
AUDIT DATE	Date	2	optional	Date the item was physically inventoried last.
GFE NUM	String	8	optional	Identifier assigned by the Government to an item of government furnished equipment.
CONTROL ITEM ID	String	20	optional	Identifier of a corresponding, version-controlled item in the BASELINE MANAGEMENT system. The operator may enter the ID if known, or perform a zoom to the baseline data file.
RMA #	String	16	optional	Reference to the return material authorization number assigned to an item.
WARRANTY EXP DATE	Date	2	optional	Date the warranty on the item ends. This field defaults to 365 days from the date of entry.

4.3.4.2.1.2 EIN Manager (EDF) Screen

The EIN Manager (EDF) screen (Figure 4.3.4-6) is designed to view or modify all EIN-controlled inventory items. Although operators may modify most fields on the screen, they should rely on ILM's transaction processing functions for this as much as possible. The functions set standardized values for many of the fields and ensure values in corresponding records are set at the same time. Only operators thoroughly trained in XRP-II's data interdependencies should use this screen.

EIN Manager (EDF)		Last: 34252	Current: 2067
EIN:	00002343	SUFFIX:	
LCS NAME:	n00002	HOST ID:	
SERIAL NUMBER:	709F116C		
DEM PART NUMBER:	A14-UCB1-95-128EB		
DEM DESCRIPTION:	Ultra Server 2 Model 1200 200 MHz		
HWMSFT CODE:	H	HARDWARE	
MO:	SUN	LCS PART ALIAS:	
MODEL/VERSION:	1200	RESP ORG:	
VENDOR:	SUN	MANF YEAR:	1996
SOFTWARE LIC NUM:		RECEIVE DATE:	03/10/97
MAINT VENDOR:	SUN	MAINT CONTRACT:	CCW7019
WARRANTY EXP DATE:	12/31/98	STATUS CODE:	1
NASA CONTRACT:	N055-60000	RELEASE CODE:	
PO Number:	CCW006714	UNIT COST:	0.00
Item Code:	03	INSTALLATION DATE:	12/06/99
LOCATION:	GSFC	BUILDING:	32
ROOM:		USER:	167
AUDIT DATE:	01/27/99	EFE NUM:	
CONTROL ITEM ID:		RNA #:	(NASA ECN)
Report Number:	1094 E	Shipping Report Number:	0
COMMENT:			
CODE:			
NOTE:			

Next Prior View Find Go Select Sort Note Copymain Save Where Help More Quit

Figure 4.3.4-6. EIN Manager (EDF) CHUI

Table 4.3.4-4 describes the fields on the EIN Manager screen.

Table 4.3.4-4. EIN Manager (EDF) Field Description (1 of 3)

Field Name	Data Type	Size	Entry	Description
EIN	String	20	required	Identifier for an EIN-controlled inventory item. This field is for the entry of the actual silver tag numbers attached to each item. If an item must be controlled by ILM but does not receive a silver tag, operators can press RETURN at the field prompt to have the system assign the next sequential number available based on the value for Last EIN in the System Parameters file. This number, whether entered or assigned, must be used for all machine configuration operations as well as reporting and maintenance functions.
ECS NAME	String	30	optional	Name of the machine with which the item is associated.
SUFFIX	String	3	optional	Code which when used as a suffix to ECS Name forms an identifier (RMA ID) for equipment subject to RMA reporting.
SERIAL NUMBER	String	30	optional	Serial number of the item.
HOSTID	String	20	optional	Hexadecimal identifier of the host machine obtained when the "hostid" Unix shell command is run.
OEM PART NUMBER	String	34	optional	Manufacturer's or vendor's part number. The operator may zoom to the OEM Parts table and choose the number, if it had been entered there previously. (See OEM Part Numbers.)
OEM DESCRIPTION	String	40	optional	Manufacturer's or vendor's description for the item. This field reflects the description of the OEM PART NUMBER entered in the field above, but provides the ability for the operator to modify it in the EIN file.
HDWSFT CODE	String	10	optional	Code for classifying inventory items by type. The operator may zoom to the Hardware/Software Codes file and choose the code, if it had been entered there previously. (See the Hardware/Software Codes section.).
MFG	String	6	optional	Code used for the manufacturer.
ECS PART ALIAS	String	40	optional	Common name used in ECS for a product and all its versions and variants.
MODEL/VERSION	String	24	optional	Model or version of the item. If the operator had chosen a known OEM Part, this field will be written with the information from that file.
RESP ORG	String	6	optional	Code of the organization responsible for the item.
VENDOR	String	6	optional	Code for the Vendor from whom the item was purchased. The operator may zoom to the Vendor data file and pick the desired code, if it had been entered there previously. (See the Vendor Master Manager section.).

Table 4.3.4-4. EIN Manager (EDF) Field Description (2 of 3)

Field Name	Data Type	Size	Entry	Description
MANF YEAR	String	4	optional	Year (4-digit) the item was manufactured. This field defaults to the year specified in the system parameters data file.
SOFTWARE LIC NUM	String	10	optional	License number for a software type license item.
RECEIVE DATE	String	8	optional	Date item was received from vendor.
MAINT VENDOR	String	6	optional	Code for the item's maintenance vendor. The operator may zoom to the Vendor data file and choose the appropriate code if it had been entered there previously. (See the Vendor Master Manager section.)
MAINT CONTRACT	String	15	optional	Identifier for the Maintenance Contract under which the item is covered. The operator may zoom to the Contract data file and choose the desired contract number if it had been entered there previously. (See the Maintenance Contracts section.) .
WARRANTY EXP DATE	Date	2	optional	Date the warranty on the item ends. This field defaults to 365 days from the date of entry.
STATUS CODE	String	1	optional	Code that designates the status of the item. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived;
NASA CONTRACT	String	11	system-supplied	Identifier designating the government contract used for this item. This information is automatically assigned and can not be changed.
RELEASE CODE	String	10	optional	Code for distinguishing the release status of the item.
Po Number	String	10	optional	Identifier of the purchase order against which the item was received. The system sets the value during Receipt Confirmation processing.
UNIT COST	Floating	10.2	optional	Purchase cost of the item.
Tran Code	Numeric	3	system-supplied	Code designating the transaction type. The value will always be set to '03' and is not modifiable by the operator.
INSTALLATION DATE	Date	2	optional	Date the item was installed. The system sets the value during EIN Installation processing.
LOCATION	String	8	optional	Identifier that designates an inventory location. The operator may zoom to the Inventory Locations data file to pick an appropriate code if it had been entered there previously. (See the Inventory Location Manager section.) The system sets the value during all EIN transaction processing. (See the EIN Transactions section.)

Table 4.3.4-4. EIN Manager (EDF) Field Description (3 of 3)

Field Name	Data Type	Size	Entry	Description
BUILDING	String	6	optional	Identifier for the building where the item can be found.
ROOM	String	6	optional	Identifier for the room where the item can be found.
USER	String	8	optional	Code for the person who has the item. The operator may zoom to the Employee table and choose the code, if it had been entered there previously. (See Employee Maintenance).
AUDIT DATE	Date	2	optional	Date the item was physically inventoried last
GFE NUM	String	8	optional	Identifier assigned by the Government to an item of government furnished equipment.
CONTROL ITEM ID	String	20	optional	Identifier of a corresponding, version-controlled item in the BASELINE MANAGEMENT system. The operator may enter the ID if known, or perform a zoom to the baseline data file.
RMA #	String	16	optional	Reference to the return material authorization number assigned to an item.
Report Number	Numeric	4	system-supplied	Identifier under which all installation reports for the EIN are grouped.
Shipping Report Number	Numeric	2	system-supplied	Report number assigned to the item when the item is shipped. The system sets the value during EIN Shipment processing.
COMMENT	String	60	optional	Miscellaneous information specific to the item.
CODE	String	2	optional	Identifier for a type or category of note associated with the item
NOTE	String	60	optional	A message that can be associated with the item.

4.3.4.2.1.3 EIN Structure Manager (EDF) Screen

The EIN Structure Manager (EDF) screen is designed for defining a structure for a machine (i.e., assigning child items to parents manually). It consists of a header screen for identifying the structure's parent EIN and attributes about the structure (Figure 4.3.4-7) and an items page for specifying each parent's children (Figure 4.3.4-8).

The header screen is always presented to the operator in INQUIRY mode. Using the /Add bottom-line command enters ADD mode so an EIN can be defined as a parent. If desired, the operator can enter either a PO number or a vendor code. This will limit the EINs the system presents whenever the ZOOM function is invoked on the screen's items page. Leaving both fields blank or null lets the ZOOM function display all EIN items. When complete, the operator exits ADD mode by typing <F3>, then uses the Items command to get to the items page for adding or changing the parent's EIN children.

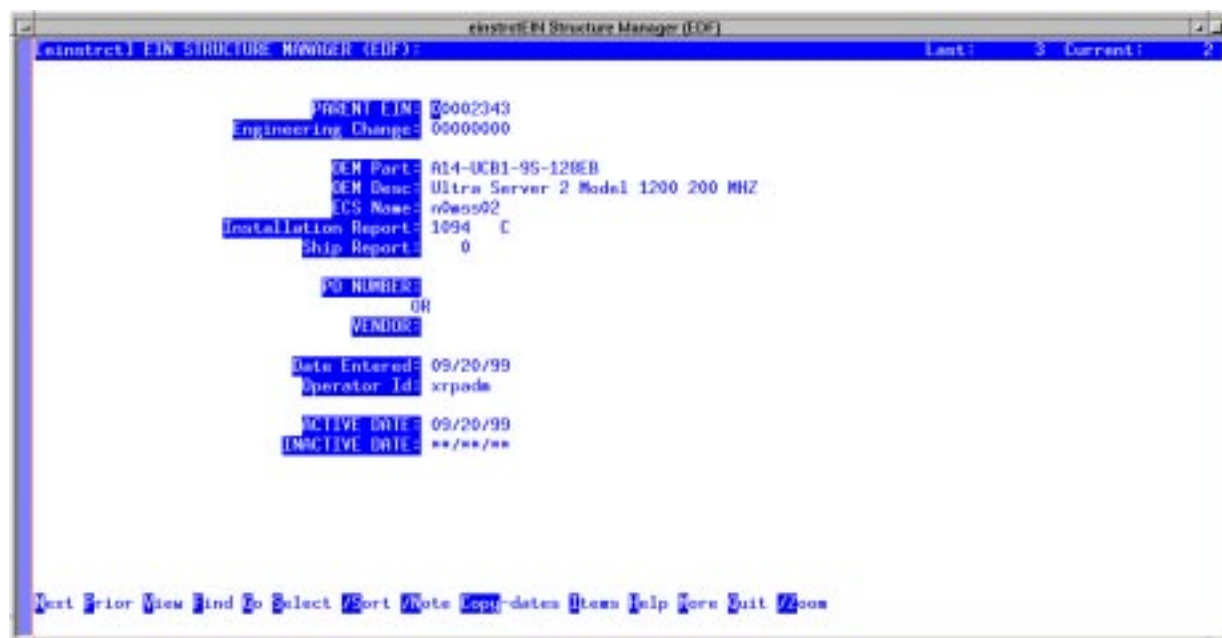


Figure 4.3.4-7. EIN Structure Manager (EDF) CHUI

Table 4.3.4-5 contains a description of the EIN Structure Manager fields.

Table 4.3.4-5. EIN Structure Manager (EDF) Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	required	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
Engineering Change	String	8	required; <ENTER>	Product structure change number assigned to the parent EIN when its EIN record was added to the database. The operator should press <ENTER> at this field to allow the system to assign the default, "00000000", when adding new records.
OEM Part	String	34	system-supplied	OEM part number for the item entered as the parent EIN.
OEM Desc	String	40	system-supplied	OEM Description for the item entered as the parent EIN.
ECS Name	String	30	system-supplied	Name of the machine with which the item is associated.

Table 4.3.4-5. EIN Structure Manager (EDF) Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Installation Report	Numeric	4	system-supplied	Identifier under which all installation reports for the EIN are grouped.
Ship Report	Numeric	3	system-supplied	Report number assigned to the item when it is shipped.
PO NUMBER	String	10	optional; cannot be used when Vendor field is	Number of the purchase order against which the parent EIN item was received. The PO will be used to aid item selection when adding children items to the parent. The operator may zoom to the PO table and choose the number, if it had been entered there previously. (See the Purchase Order Entry section.) If a PO Number is entered, the operator may not enter a Vendor Code in the next field.
VENDOR	String	6	optional; cannot be used when PO Number field is	Code for the Vendor from whom the item was purchased. The code will be used to aid item selection when adding children items to the parent. The operator may zoom to the Vendor data file and pick the desired code if it had been entered there previously. (Vendor Master Manager.) If a Vendor code is entered, the operator may not enter a PO number in the field above.
Date Entered	Date	2	system-supplied	Date when this record was added to the database.
Operator ID	String	8	system-supplied	Login ID of the operator who added the EIN structure parent record to the database.
ACTIVE DATE	Date	2	optional	Default effective date on which components are assigned to the Parent EIN. Actual dates, which can vary among components, can be set via the screen's items page and by transactions that alter EIN structures. NOTE: **/**/** = earliest system date.
INACTIVE DATE	Date	2	optional	Default effective date on which components are no longer assigned to the Parent EIN. Actual dates, which can vary among components, can be set via the screen's items page and by transactions that alter EIN structures. NOTE: **/**/** = latest system date.

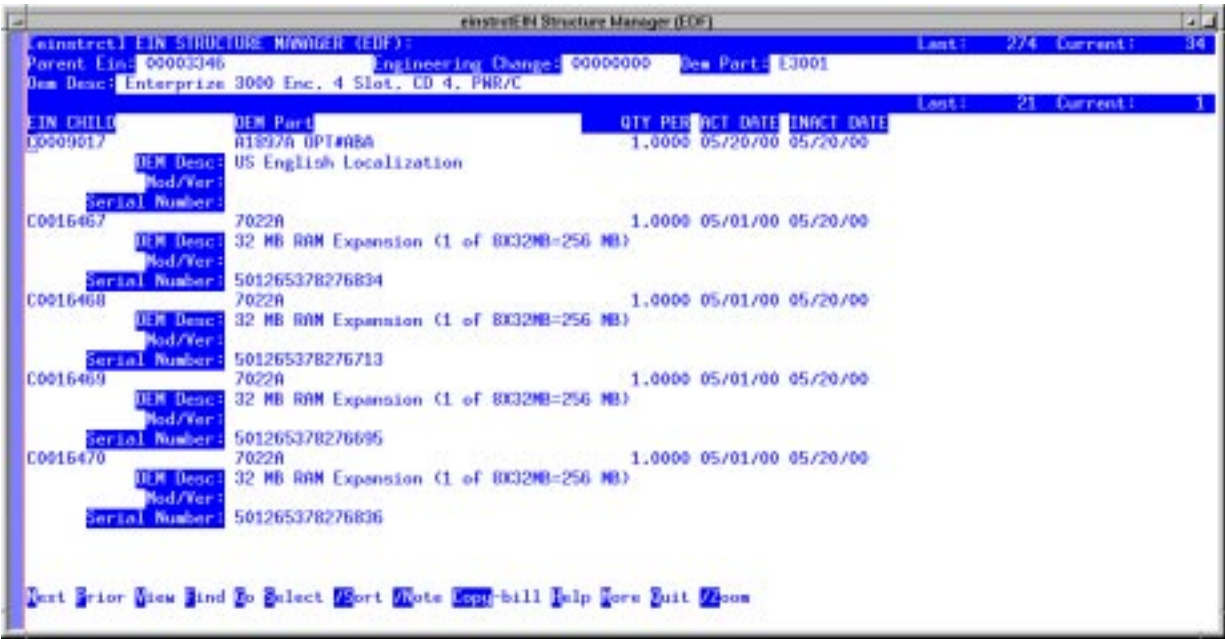


Figure 4.3.4-8. Items Page for EIN Structure Manager (EDF) CHUI

Table 4.3.4-6 describes the fields used on the Items Page for EIN Structure Manager.

**Table 4.3.4-6. Items Page for EIN Structure Manager (EDF)
Field Descriptions (1 of 2)**

Field Name	Data Type	Size	Entry	Description
EIN CHILD	String	20	required	EIN for a child item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
OEM PART	String	34	system-supplied	OEM part number for the item entered as the parent EIN.
QTY PER	String	34	system-supplied	Number of items in the EIN structure for the parent.
ACTIVE DATE	Date	2	required	Effective date on which the EIN child is assigned to the Parent EIN. NOTE: **/**/** = earliest system date.
INACTIVE DATE	Date	2	required	Effective date on which the EIN child is no longer assigned to the Parent EIN. NOTE: **/**/** = latest system date.
OEM DESC	String	40	system-supplied	OEM Description for the item entered as the parent EIN.

**Table 4.3.4-6. Items Page for EIN Structure Manager (EDF)
Field Descriptions (2 of 2)**

Field Name	Data Type	Size	Entry	Description
MOD/VER	String	24	system-supplied	Model or version of the item. If the operator had chosen a known OEM Part, this field will be written with the information from that file.
SERIAL NUMBER	String	30	system supplied	Serial number of the item.

4.3.4.2.1.4 EIN Inventory Query Screen

The EIN Inventory Query screen (Figure 4.3.4-9) is designed to view the inventory location of EIN controlled items. The operator may sort and select by any field on the screen and then print a report of the data. This screen is displayed in INQUIRY mode only and the operator may not modify any data with this screen.

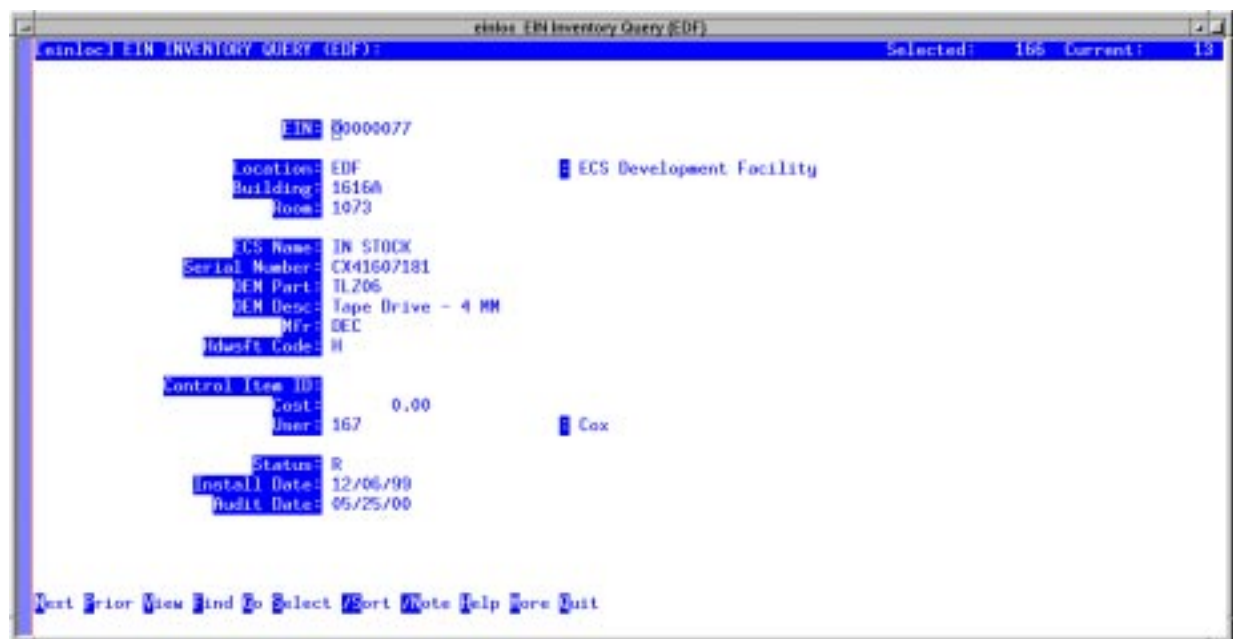


Figure 4.3.4-9. EIN Inventory Query CHUI

Table 4.3.4-7 describes the fields on the EIN Inventory Query screen.

Table 4.3.4-7. EIN Inventory Query Field Descriptions

Field Name	Data Type	Size	Entry	Description
EIN	String	20	system-supplied	Identifier for an EIN-controlled inventory item.
Location	String	8	system-supplied	Identifier that designates an inventory location.
:	String	30	system-supplied	Description for the inventory location. It is obtained from the inventory location file based on the value in field Location.
Building	String	6	system-supplied	Identifier for the building where the item can be found.
Room	String	6	system-supplied	Identifier for the room where the item can be found.
ECS Name	String	30	system-supplied	Name of the machine with which the item is associated.
OEM Part	String	34	system-supplied	Manufacturer's or vendor's part number for the item.
OEM Desc	String	40	system-supplied	Manufacturer's or vendor's description for the item.
Mfr	String	6	system-supplied	Code used for the manufacturer.
Hdwsft Code	String	10	system-supplied	Code for classifying inventory items by type.
Control Item ID	String	20	system-supplied	Identifier of a corresponding version-controlled item in the BASELINE MANAGEMENT system.
Cost	Floating	9.2	system-supplied	Cost of the item.
User	String	8	system-supplied	Code of the person who has the item.
:	String	30	system-supplied	Name of the person who has the item. It is obtained from the employee file based on the value in field User.
Status	String	1	system-supplied	Code that designates the status of the item. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; A = Archived;
Install Date	Date	2	system-supplied	Date the item was installed.
Audit Date	Date	2	system-supplied	Date the item was physically inventoried last.

4.3.4.2.1.5 EIN Structure Manager Screen

This screen is the DAAC equivalent of the EIN Structure Manager (EDF) screen. (See Section 4.3.4.2.1.3). It performs the same functions, except it accesses the EIN structure records for items located at the local DAAC only.

4.3.4.2.1.6 EIN Manager Screen

This screen is the DAAC equivalent of the EIN Manager (EDF) screen. (See Section 4.3.4.2.1.2.) It performs the same functions, except it accesses the EIN records for items located at the local DAAC only.

4.3.4.2.2 EIN Transactions

The EIN Transactions menu (Figure 4.3.4-10) lets operator navigate to a set of screens for performing transactions to install, ship, transfer, archive, and relocate inventory items. It also provides access to a screen for browsing the log of past inventory transactions. Each of these screens is described in a separate subsection that follows.

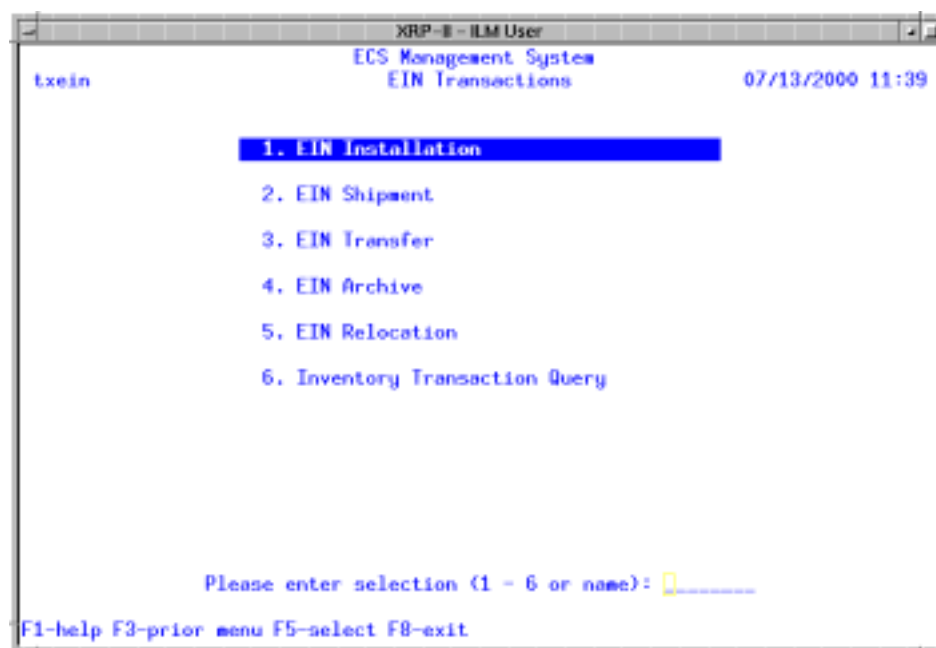


Figure 4.3.4-10. EIN Transactions Menu

4.3.4.2.2.1 EIN Installation Screen

The EIN Installation screen (Figure 4.3.4-11) is designed for updating property records to reflect installation of EIN-controlled items. It has a header screen for specifying the parent EIN involved and some installation parameters, and an items page for designating which of the parent's children EINs are being installed. The transaction can be run only if it is initiated at the SMC or if the specified parent EIN is located at the local site.

Operators complete the fields on the header screen, using Table 4.3.4-8 as a guide, then use the **Items** command to invoke the items page (Figure 4.3.4-12 and Table 4.3.4-9). The items page lists all the parent's children EINs, displaying two lines per item. Operators choose which children are being installed by entering **MODIFY** mode and typing "Y" in the Install column for applicable

items. They next press <F3> twice to exit both MODIFY mode and the items page, then type “E” at the header screen to execute the transaction and, if desired, print a report.

Upon receiving the Execute command, XRP-II checks if the parent EIN is already installed. If it is, the operator is asked to confirm it should be re-installed. If the response is “Y”, it proceeds to check if there are also children to process; if the response is “N”, the install is abandoned.

For each item being installed (parent as well as children), XRP-II updates the EIN’s location and user data based on the installation parameters, sets its status to “I” and its install date to the current date, and gives the EIN an appropriate install report number and report alpha character. Children EINs that are being installed inherit the parent’s ECS name as well as its install report number and alpha character. Also for each item, XRP-II adjusts inventory counts for the gaining and losing buildings and writes an “INS” record in the inventory transaction log to capture details of the event. This includes date/time of the event, operator initiating it, location changes, reason for change, and authorizing CCR or trouble ticket.

Upon completing the transaction, XRP-II generates an installation report that the operator can display on screen, print, or save to a file, or cancel by pressing <F3>.

Note: EIN Installation does not alter any EIN structure records.

Note: If the parent EIN has an installation report number, its report alpha character is incremented according to the Report Number conversion table. Otherwise, it is assigned a new report number one greater than the last used as specified in the system parameters table.

Note: The Location field must not be null, or the item will not get installed.

The screenshot shows a window titled "Install EIN Installation". The window contains a list of installation parameters for a parent EIN. The parameters are displayed in a two-column format. The first column lists the current values, and the second column lists the new values to be installed. The parameters are: PARENT EIN: 00002343, ECS Name: n0asn02, DEW Description: Ultra Server 2 Model 1200 200 MHz, Serial Number: 709F116C, Model/Version: 1200, Mfr/dev: SUN, DEW Part Number: A14-UCB1-95-128EB, Status Code: I, Control Item ID: , Installation Report: 1094 C, Old Location: GSFC, Old Building: 32, Old Room: , Old User: 167, NEW LOCATION: NSIDC, NEW BUILDING: NSIDC, NEW ROOM: 161, and NEW USER: 131. At the bottom of the window, there is a legend for the keyboard shortcuts: F1-help, F2-clear, F3-exit, F4-mode, F5-default, and F6-pow. Below the legend, it says "Typeover mode".

Parameter	Current Value	New Value
PARENT EIN	00002343	
ECS Name	n0asn02	
DEW Description	Ultra Server 2 Model 1200 200 MHz	
Serial Number	709F116C	
Model/Version	1200	
Mfr/dev	SUN	
DEW Part Number	A14-UCB1-95-128EB	
Status Code	I	
Control Item ID		
Installation Report	1094	C
Old Location	GSFC	NEW LOCATION: NSIDC
Old Building	32	NEW BUILDING: NSIDC
Old Room		NEW ROOM: 161
Old User	167	NEW USER: 131

Legend: F1-help, F2-clear, F3-exit, F4-mode, F5-default, F6-pow
Typeover mode

Figure 4.3.4-11. EIN Installation CHUI

Table 4.3.4-8 describes the fields on the EIN Installation screen.

Table 4.3.4-8. EIN Installation Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	required	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
ECS Name	String	30	system-supplied	Name of the machine with which the item is associated.
OEM Description	String	40	system-supplied	Manufacturer's or vendor's description for the item. The value is obtained from the EIN file.
Serial Number	String	30	system-supplied	Serial number of the Parent EIN. The value is obtained from the EIN file.
Model/Version	String	24	system-supplied	Model or version of the item. The value is obtained from the EIN file.
Mfr/dev	String	6	system-supplied	Code used for the manufacturer of the item. The value is obtained from the EIN file.
OEM Part Number	String	34	system-supplied	Manufacturer's or vendor's part number for the item. The value is obtained from the EIN file.
Status Code	String	1	system-supplied	Code that designates the status of the item. The value is obtained from the EIN file.
Control Item ID	String	20	system-supplied	Identifier of a corresponding, version-controlled item in the BASELINE MANAGEMENT system. The value is obtained from the EIN file.
Installation Report	Numeric	4	system-supplied	Identifier under which all installation reports for the EIN are grouped. The value is obtained from the EIN file.
Old Location	String	6	optional	Code for the inventory location as currently recorded for the EIN. The value is obtained from the EIN file.
Old Building	String	10	optional	Code for the building as currently recorded for the EIN. The value is obtained from the EIN file.
Old Room	String	6	optional	Code for the room as currently recorded for the EIN. The value is obtained from the EIN file.
Old User	Numeric	4	optional	Code for the user as currently recorded for the EIN. The value is obtained from the EIN file.
NEW LOCATION	String	6	optional	Code for the inventory location where the EIN(s) are being installed. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
NEW BUILDING	String	10	optional	Code for the building where the EIN(s) are being installed.

Table 4.3.4-8. EIN Installation Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
NEW ROOM	String	6	optional	Code for the room where the EIN(s) are being installed.
NEW USER	Numeric	4	optional	Code for the user of the EIN(s) being installed. The operator may zoom to the Employee table and choose the code, if it had been entered there previously. (See the Employee Manager section.)

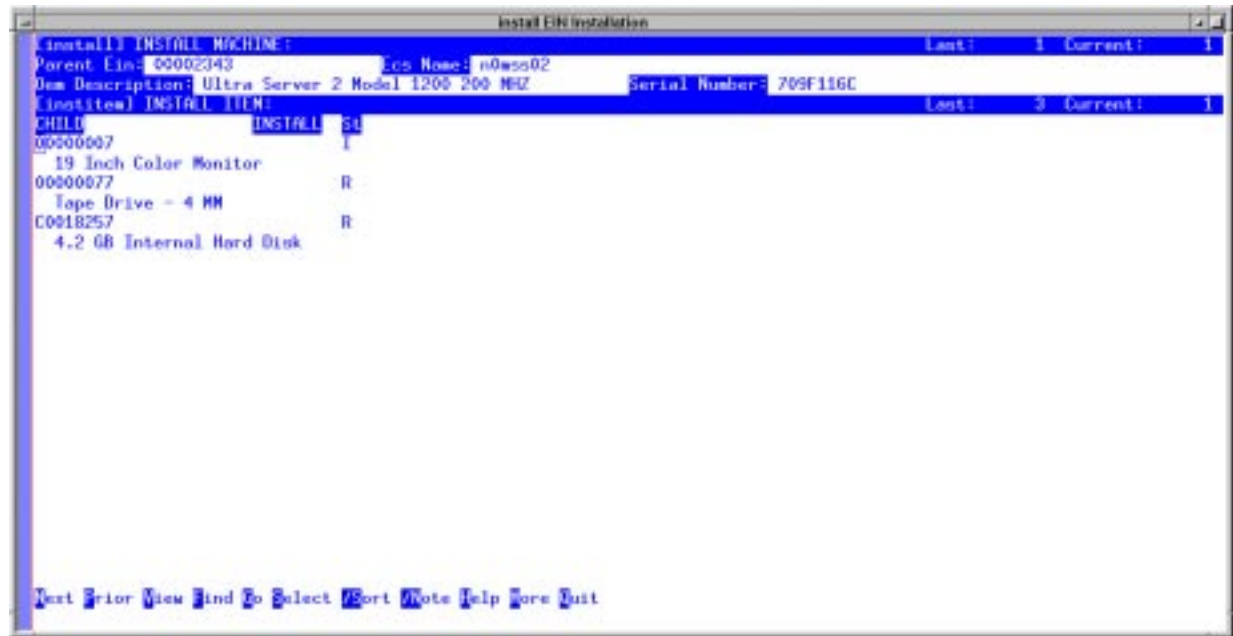


Figure 4.3.4-12. EIN Installation Items Page CHUI

Table 4.3.4-1 describes the fields on the EIN Installation Items Page.

Table 4.3.4-9. EIN Installation Items Page Field Descriptions

Field Name	Data Type	Size	Entry	Description
CHILD	String	20	required	Identifier for an EIN-controlled inventory item that is a child of the parent EIN being installed. The system displays its OEM description on the succeeding line
INSTALL	String	1	optional; Y or N	Flag designating if the item is being installed.
St	String	1	system-supplied	The status of the item.

4.3.4.2.2 EIN Shipment Screen

The EIN Shipment screen (Figure 4.3.4-13 and Table 4.3.4-10) is designed for recording shipments of EIN-controlled items from one place to another. It consists of a header screen and three items pages invoked via bottom-line commands. The header screen describes the shipment itself and has two of the items pages. The first is the Cartons page for describing the cartons in a shipment (Figure 4.3.4-14 and Table 4.3.4-11). The second is the Ship EIN Parents page for listing parents being shipped (Figure 4.3.4-15 and Table 4.3.4-12). The Ship EIN Parents page has the third items page, Ship Item, which is used to list which children EINs are being shipped with its parent (Figure 4.3.4-16 and Table 4.3.4-13).

The screenshot shows a terminal window titled "shipein EIN Shipment". The window contains a form with the following fields and values:

- shipein] SHIP EIN: (blank)
- LAST: 22
- CURRENT: 1
- EIN INTERNAL SHIPMENT SEQUENCE: 68
- DESTINATION: (blank)
- Report Number: 0 Alpha
- SHIP DATE: **/**/**
- ESTIMATED SHIP DATE: **/**/**
- Operator Id: ewotthew
- SHIP VIA: GROUND
- BILL OF LADING: (blank)
- Number Of Cartons: 0 Weight: 0.0
- BUILDING: (blank)
- CARRIER: (blank)
- Status: (blank)
- Consignee Name: (blank)
- Address 1: (blank)
- Address 2: (blank)
- City: (blank)
- State: (blank)
- Zip: (blank)
- Phone: (blank)
- USER: (blank)

At the bottom of the screen, there is a menu bar with the following options: Exit, Prior, New, Find, To Select, Sort, Note, Items, Cartons, Execute, Help, More, Quit.

Figure 4.3.4-13. EIN Shipment CHUI

Shipments can include one or more parent EINs and one or more children EINs for each parent, but the system does **not** track which carton contains each item. Each shipment is accorded a unique system number and reports of shipments are serialized by site. This transaction can be run only if it is initiated at the SMC or if the parent EINs are at the local site.

Operators complete the fields on the header screen stipulating the shipment's parameters, then type ".C" (the Cartons command) to invoke the Cartons page. The Cartons page is presented in ADD mode to facilitate adding records that identify the shipment's packages. Pressing <F3> twice exits ADD mode and returns to the header screen where the Items command can be invoked.

Table 4.3.4-10. EIN Shipment Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
ILM INTERNAL SHIPMENT SEQUENCE	Numeric	6	required; <ENTER>	Internal shipment sequence number maintained by the system. The operator should always press return at this field to allow the system to assign the next internal sequence number.
DESTINATION	String	6	optional	Code for the inventory location to receive the shipment. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
Report Number	String	4	system supplied	Report number assigned to the item when the item is shipped. Each site has its own number. So, items shipped from any inventory location at the site share the same number.
Alpha	String	4	system supplied	Code letter identifying a sequence number for the shipping reports generated by a site.
SHIP DATE	Date	2	optional	Date the item(s) is actually shipped. The value defaults to the current date.
ESTIMATED SHIP DATE	Date	2	optional	Date the item(s) is estimated to ship.
Operator Id	String	8	system supplied	Login ID of the operator recording the transaction.
SHIP VIA	String	20	optional	Method by which the item(s) is shipped.
BILL OF LADING	String	12	optional	Identifier for the shipment's Bill of Lading.
Number of Cartons	Numeric	4	system supplied	Number of cartons in the shipment. This value is calculated from entries on the Cartons page.
Weight	Floating	7.1	system supplied	Total weight of the shipment. This value is calculated from entries on the Cartons page.
BUILDING	String	6	optional	Identifier for the building to which the item is being shipped.
ROOM	String	6	optional	Room number to which the item is being shipped.
Carrier	String	6	system supplied	Code for the carrier handling the shipment. The operator may zoom to the Carrier data file and choose the appropriate code, if it had been entered there previously. (See the Carriers section).
Status	String	1	system supplied	Code that designates the status of the item. The following values are set when processing transactions L = Received; S = Shipped; I = Installed; A = Archived.
Consignee Name	String	30	system supplied	Name of the consignee at the destination location. The value is obtained from the Inventory Location record for the entered Destination.
Address	String	30	system supplied	Address to receive the shipment. The value is obtained from the Inventory Location record for the entered Destination.

Table 4.3.4-10. EIN Shipment Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
City	String	20	system supplied	Name of the city to receive the shipment. The value is obtained from the Inventory Location record for the entered Destination.
State	String	2	system supplied	Code for the state to receive the shipment. The value is obtained from the Inventory Location record for the entered Destination.
Zip	String	10	system supplied	Zip code for the shipment's destination. The value is obtained from the Inventory Location record for the entered Destination.
Phone	String	18	system supplied	Phone number for the consignee at the shipment's destination. The value is obtained from the Inventory Location record for the entered Destination.
USER	String	8	optional	Code of the person who will receive the item. The operator may choose to zoom to the Employee data file to choose the appropriate code, if it had been entered there previously. (See the Employee Manager section.)

Next, operators type “**I**” (the **I**tems command) to display the Ship EIN Parents page, which is presented in ADD mode, too. They enter the EIN for each parent being shipped, then press <**F3**> to exit ADD mode. Now they invoke this page’s **I**tems command to display the Ship Item page for any parent that they highlight with the cursor.

The Ship Item page lists each a parent’s children EINs that are not already being shipped (i.e., status not equal to “S”). Operators type /**M** to invoke MODIFY mode, then place a “**Y**” in the Ship column for each child to include in the shipment. Pressing <**F3**> twice exits back to the Ship EIN Parents page so another set of children can be included. When done, typing <**F3**> on this page returns to the header screen where the transaction can be executed.

Upon receiving the Execute command, the EIN Shipment process changes the EIN record of every item in the shipment to reflect the shipment’s destination, building, room, and user. It sets each item’s status to “S” and gives it a shipping report number and alpha character appropriate for the sending site. Also for each item, XRP-II adjusts inventory counts for the gaining and losing buildings and writes an “SHP” record in the inventory transaction log to capture details of the event. This includes date/time of the event, operator initiating it, location changes, reason for change, and authorizing CCR or trouble ticket.

Note: Operators can specify children EINs on the Ship EIN Parents page in order to ship them without their parents.

Note: Using the Ship EIN Parents page to specify a parent EIN that has already been shipped so that the Ship Item page can be used to designate children causes the parent to be shipped again.

Note: Operators cannot re-ship children EINs while their status is “S”. However, they can re-ship Parent EINs in order to ship their children, but the system will prompt for confirmation first.

Note: EIN Shipment does not alter EIN structure records.

Note: EIN shipment reports are numbered by site. Each site has its own shipping report number (see Shipment Number Manager section), and XRP-II automatically assigns a new alpha character for each shipment from the site. Shipping report alpha characters are incremented according to the Report Number conversion table (see Report Number section).

Figure 4.3.4-14. Carton Size Page for EIN Shipment

Table 4.3.4-11 describes the fields on the Carton Size Page screen.

Table 4.3.4-11. Carton Size Page for EIN Shipment Field Descriptions

Field Name	Data Type	Size	Entry	Description
SEQUENCE	Numeric	4	required	This field is the automatically assigned sequence number of the cartons data attached to the shipment header record.
DIMENSIONS	String	8	optional	Enter the actual dimensions of the box.
WEIGHT	Floating	7.1	optional	Enter the weight of the box.
QUANTITY	Floating	10.1	optional	Enter the quantity of the boxes having the same dimension and weight.

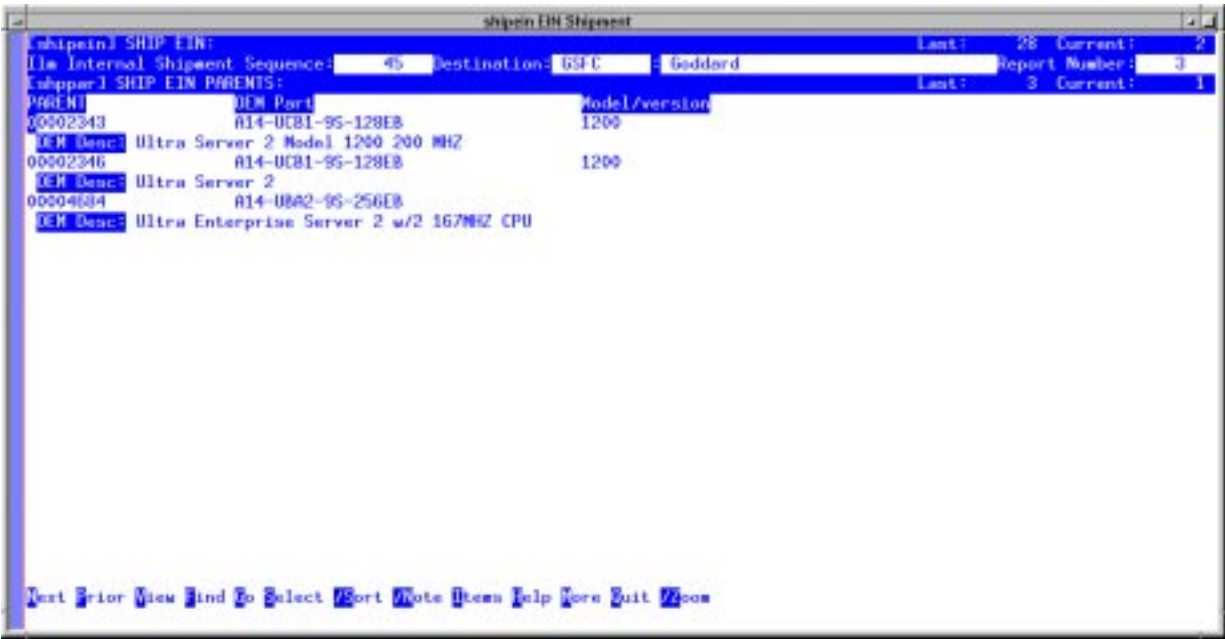


Figure 4.3.4-15. Items Page for EIN Shipment

Table 4.3.4-12 describes the fields on the Items Page for EIN Shipment.

Table 4.3.4-12. Items Page for EIN Shipment Field Descriptions

Field Name	Data Type	Size	Entry	Description
PARENT	String	20	required	Enter the Parent EIN number to be shipped.
OEM Part	String	34	system supplied	Manufacturer's or vendor's part number for the item.
Model	String	24	system supplied	Model or version of the item.
OEM Desc	String	—	system supplied	Manufacturer's or vendor's description for the item.

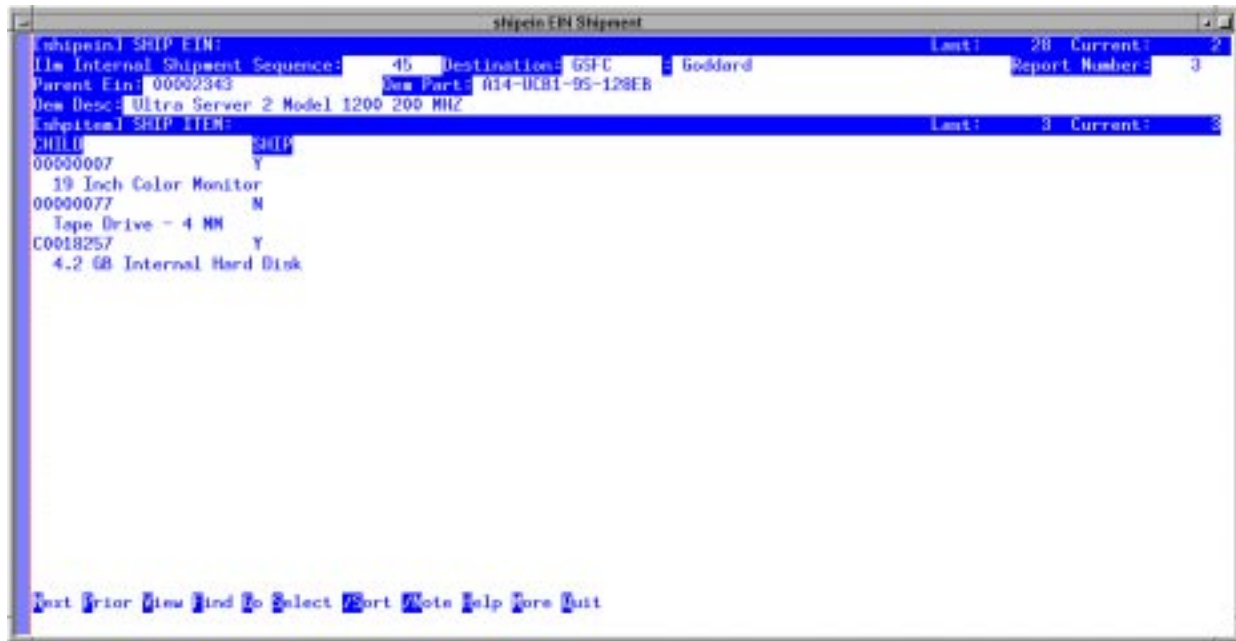


Figure 4.3.4-16. Items Structure Page for EIN Shipment

Table 4.3.4-13 describes the fields on the Items Structure Page for EIN Shipment screen.

**Table 4.3.4-13. Items Structure Page for EIN Shipment
Field Descriptions**

Field Name	Data Type	Size	Entry	Description
CHILD	String	20	required	EIN for a component of the parent. Its description from the EIN record is displayed on the line underneath.
SHIP	String	1	optional; Y or N	Flag designating whether the EIN is included in the shipment. A null value is the same as "N".

4.3.4.2.2.3 EIN Transfer Screen

The EIN Transfer screen (Figure 4.3.3-17) is designed for updating property records when a parent EIN and all its children are being moved from one inventory location, building, room, or user to another. The screen is presented to operators in ADD mode, so they need only identify the parent EIN, specify its new destination and user, press <F3> to exit ADD mode, and type "E" to execute the transaction. The transaction can be run only if it is initiated at the SMC or if the specified parent EIN is located at the local site. Screen fields are described in Table 4.3.4-14.

Upon receiving the Execute command, XRP-II checks if the specified EIN has any parents. If it does, the item is not a true parent EIN so XRP-II informs the operator to use the EIN Relocation function and terminates. If the EIN has no parents, XRP-II updates the EIN records for the parent

and all its children. It stores data from the header screen, clears installation date values, assigns each item a status of “R”, and adjusts inventory counts for the gaining and losing buildings. XRP-II also writes a “TR” record in the inventory transaction log to capture details of the event for each item, including date/time of the event, operator initiating it, location change, reason for change, and authorizing CCR or trouble ticket.

Upon completing the transaction, XRP-II generates a transfer/receipt report that the operator can display on screen, print, or save to a file, or can cancel by pressing <F3>.

Note: EIN Transfer does not alter any EIN structure records.

Note: No transaction exists for assigning an EIN child to a new room or user without its parent.

The screenshot shows a window titled "transferEIN Transfer". The window has a menu bar at the top with options: "transferEIN TRANSFER MACHINE", "Lant:", "Current:", and "1". The main area contains the following fields:

- PARENT EIN: 00002343
- DESTINATION LOCATION: GSFC
- BUILDING: 32
- ROOM:
- REASON CODE: 02
- CCR #: 99-9999
- TROUBLE TICKET: ☐
- NEW USER: 167

At the bottom of the window is a menu bar with options: "Text", "Prior", "Find", "Go", "Select", "Sort", "Note", "Execute", "Help", "Open", "Quit".

Figure 4.3.4-17. EIN Transfer CHUI

Table 4.3.4-14 describes the fields on the EIN Transfer screen.

Table 4.3.4-14. EIN Transfer Field Descriptions

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	required	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
LOCATION	String	6	optional	Code for the inventory location gaining the item. The operator may zoom to the Inventory Location table and choose the code, if it been entered there previously. (See the Inventory Location Manager section.)
BUILDING	String	6	optional	Identifier for the building gaining the item.
ROOM	String	6	optional	Number for the room gaining the item.
REASON CODE	String	4	optional	Code for the reason for the transaction. The operator may zoom to the Reason Code table and choose the code, if it had been entered there previously. (See the Reason Code Maintenance section.)
CCR #	String	30	optional	Identifier for the CCR authorizing the transaction
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the transaction.
NEW USER	Numeric	4	optional	Code of the user gaining the item. The operator may zoom to the Employee data file and choose a code, if it had been entered there previously. (See the Employee Manager section.)

4.3.4.2.2.4 EIN Archive Screen

Operators use the EIN Archive screen (Figure 4.3.4-18) to transfer an EIN and/or its children to an archive location and code them as unavailable for use, such as when items have failed and cannot be repaired. It has a header screen for identifying the parent EIN involved and for specifying archiving parameters (Table 4.3.4-15), and it has an items page for designating the children EINs (Figure 4.3.4-19 and Table 4.3.4-16). The transaction can be run only if the process is initiated at the SMC or if the specified parent EIN is located at the local site.

Operators complete fields on the header screen, then use the Items command to invoke the items page. The items page lists all of the parent's current children EINs using two lines per item. Operators select the children being archived by entering MODIFY mode and typing "Y" in the Archive column for applicable items. They next press <F3> twice to exit both MODIFY mode and the items page, then type "E" to execute the transaction and, if desired, print a report.

Upon receiving the Execute command, XRP-II first checks to ensure the Archive Parent field has been set and, if not, issues a warning and abandons the process. It then renders each designated item inactive as a child in EIN structures as of the current date, effectively de-allocating it from its parent. It updates the item's EIN record with values from the header screen, clears its installation date, changes its status to "X" and its user to "ARC", and adjusts inventory counts for the gaining and losing buildings. XRP-II also writes an "INS" record in the inventory transaction log to

capture details of the event for each item. Log entries include date/time of the event, operator initiating it, location change, reason for change, and authorizing CCR or trouble ticket.

Upon completing the transaction, XRP-II generates an archive report that the operator can display on screen, print, or save to a file, or can cancel by pressing <F3>.

The screenshot shows a terminal window titled "archive EIN Archive". The interface displays the following fields and values:

- PARENT EIN: 00002343
- Serial Number: 709F116C
- Ecs Name: n000002
- ARCHIVE PARENT CY/NO: Y
- ARCHIVE LOCATION: EDFARC
- BUILDING: 1616
- ROOM:
- TCR #: 99-9999
- TROUBLE TICKET:
- REASON CODE: 02

At the bottom of the screen, there is a menu bar with the following options: Text, Prior, Find, Go, Select, Sort, Note, Item, Execute, Help, More, Quit, and Zoom.

Figure 4.3.4-18. EIN Archive CHUI

Table 4.3.4-15 describes the fields on the EIN Archive screen.

Table 4.3.4-15. EIN Archive Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	required	EIN for the parent of the item(s) being archived. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry Manager section.).
Serial Number	String	30	optional	Serial number of the item.
Name	String	30	system-supplied	Name for the machine with which the item is associated. The value is obtained from the EIN record of the parent EIN.

Table 4.3.4-15. EIN Archive Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
ARCHIVE PARENT (Y/N)	String	1	required; Y or N	Flag designating if the parent EIN is to be archived. Enter Y if parent is to be archived along with children.
ARCHIVE LOCATION	String	6	optional; location must be of type "archive"	Code for the inventory location where the item is being archived. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
BUILDING	String	6	optional	Identifier for the building gaining the item.
ROOM	String	6	optional	Identifier for the room gaining the item.
CCR #	String	30	optional	Identifier for the CCR authorizing the transaction
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the transaction.
REASON CODE	String	4	optional	Code for the reason for the transaction. The operator may zoom to the Reason Code table and choose the code, if it had been entered there previously. (See the Reason Code Maintenance section.)

The screenshot shows a window titled "archive EIN Archive". It contains the following fields and values:

- Parent EIN:** 00002343
- Serial Number:** 709H110C
- Archive Parent (Y/N):** N
- Archive Item:**
 - CHILD:** 00000077
 - ARCHIVE:** Y
 - Item Desc:** Tape Drive - 4 MB
 - Serial Number:** CX4160/181

At the bottom of the window, there is a menu bar with the following options: Text, Prior, View, Find, Go, Select, Sort, Note, Help, More, Quit.

Figure 4.3.4-19. Items Page for EIN Archive CHUI

Table 4.3.4-16 describes the fields on the Items Page of EIN Archive.

Table 4.3.4-16. Items Page for EIN Archive Field Descriptions

Field Name	Data Type	Size	Entry	Description
CHILD	String	20	required	EIN for a component of the parent. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry Manager section.)
ARCHIVE	String	1	optional Y or N	Flag designating whether the EIN is to be archived. A null value is the same as "N".
OEM Desc	String	40	system supplied	Manufacturer's or vendor's description for the item.
Serial Number	String	30	system- supplied	Serial number of the item.

4.3.4.2.2.5 EIN Relocation Screen

The EIN Relocation screen (Figure 4.3.4-20) is designed for updating property records when “relocating” an EIN-controlled item; that is, associating an EIN with a new parent. It consists of a header screen for specifying relocation parameters and an items page for designating which of a parent’s children EINs are relocating. The transaction can be run only if it is initiated at the SMC or if both the source and the target parent EINs are at the local site.



Figure 4.3.4-20. EIN Relocation CHUI

Operators can choose whether to relocate the EIN as a parent (i.e., with all of its children) or to relocate only some of its children. When relocating an EIN as a parent, XRP-II reassigns the specified EIN, as an assembly, from its current parent to its new one. When relocating only some

of the EIN's children, XRP-II reassigns only the children EINs designated on the screen's items page. Operators may not relocate a parent EIN with only some of its children, as the remaining children would become orphans.

The EIN Relocation screen is presented in ADD mode. Complete the fields on the header screen using Table 4.3.4-17 as a guide. To move a parent and all of its children, operators enter the value "P" in field Parent or Children, then type "E" to execute the transaction after exiting ADD mode. If only children are relocating, operators enter the value "C", then exit ADD mode and invoke the Items command to pick which ones. On the items page (Figure 4.3.4-21 and Table 4.3.4-18), operators type /M to enter MODIFY mode and place a "Y" in the Relocate column of each affected component. They next press <F3> twice to exit both the mode and page, and then type "E" to execute the transaction.

Upon receiving the Execute command, the EIN Relocation process first determines whether or not the parent is being relocated. If it is, XRP-II renders it inactive wherever it is active as a child in an EIN structure, then adds it to the EIN structure for the new parent. This assures it is tied to the new parent alone. If only children of the EIN are relocating, XRP-II renders each child EIN inactive as a component of the existing parent, and adds them to the EIN structure for the new parent.

XRP-II then changes the EIN record of every relocating item to reflect the ECS name and location of the new parent, a status of "R", and no installation date. XRP-II also adjusts inventory counts for the gaining and losing buildings and writes "REL" records in the inventory transaction log (one per item) to capture details of the event. The log entry includes date/time of the event, operator initiating it, location changes, reason for change, and authorizing CCR or trouble ticket.

Upon completing the transaction, XRP-II generates a relocation/receipt report that the operator can display on screen, print, or save to a file, or can cancel by pressing <F3>.

Note: Child EINs can be relocated to a new parent either by relocating the child as a parent (P) or as a child (C) of its current parent.

Note: Check the system-filled field for "Serial Number" to ensure relocating the correct item.

Table 4.3.4-17. EIN Relocation Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
EIN	String	20	required	Identifier for an EIN-controlled inventory item. This field is for the entry of the actual silver tag numbers attached to each item. The operator may zoom to the EIN table and choose an EIN, if it had been entered there previously. (See the EIN Entry Manager section.)

Table 4.3.4-17. EIN Relocation Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Serial Number	String		system-supplied	Serial number of the item.
Ecs Name	String	30	optional	Name of the machine with which the item is associated.
(P)arent or (C)hildren	String	1	optional; P or C	Flag designating if the entire parent or only some children are being relocated.
New Parent EIN	String	20	required	Identifier for a parent EIN to which the item(s) is being relocated. The operator may zoom to the EIN table and choose an EIN, if it had been entered there previously. (See the EIN Entry Manager section.)
Reason Code	String	4	optional	Code for the reason for the transaction. The operator may zoom to the Reason Code table and choose the code, if it had been entered there previously. (See the Reason Code Maintenance section.)
CCR #	String	30	optional	Identifier for the CCR authorizing the transaction.
Trouble Ticket	String	15	optional	Identifier for the trouble ticket associated with the transaction.

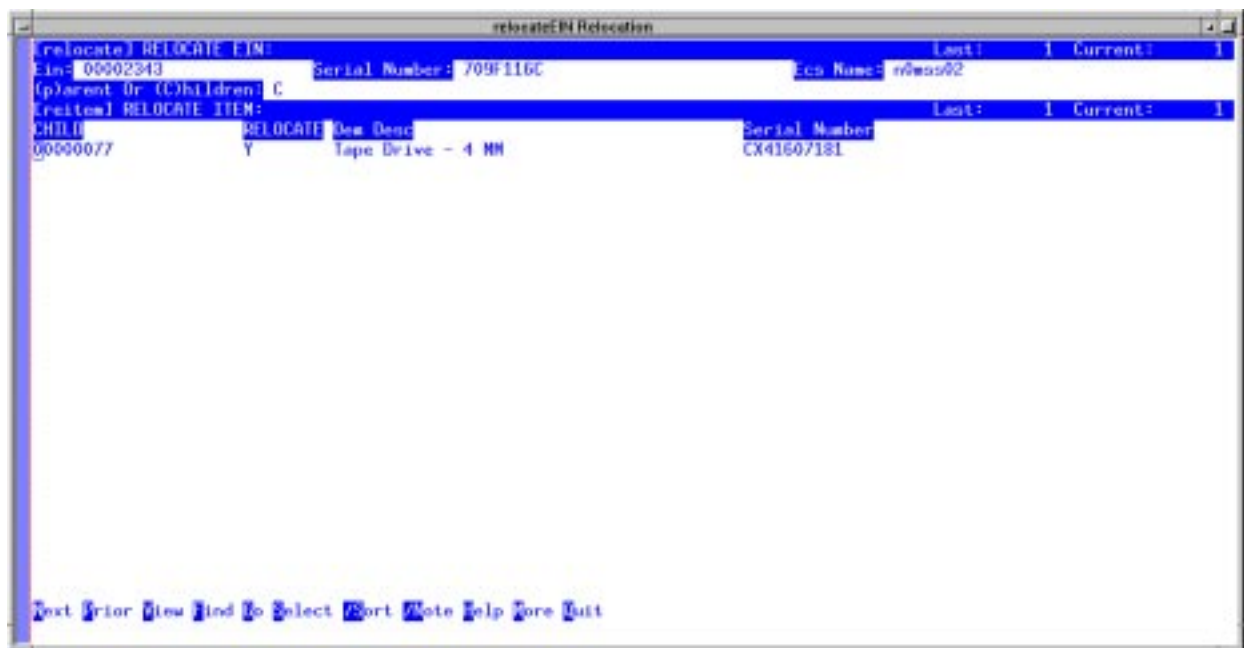


Figure 4.3.4-21. Items Page for EIN Relocation CHUI

Table 4.3.4-18 describes the fields on the Items Page for EIN Relocation screen.

Table 4.3.4-18. Items Page for EIN Relocation Field Descriptions

Field Name	Data Type	Size	Entry	Description
CHILD	String	20	required	EIN for a component of the parent. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry Manager section.)
RELOCATE	String	1	optional Y or N	Flag designating whether the EIN is to be relocated. A null value is the same as "N".
OEM Desc	String	40	system supplied	Manufacturer's or vendor's description for the item.
Serial Number	String	30	system- supplied	Serial number of the item.

4.3.4.2.2.6 Inventory Transaction Query Screen

This screen (Figure 4.3.4-22) allows operators to browse the log of all inventory transactions performed on items in the database. The operator may sort and select on any field on the screen and print ad hoc reports of sorted data, if desired, using XRP-II's report command.

The screenshot shows a window titled "Inventory Transaction Query". The main area displays a form with the following fields and values:

- Site: SMC-E
- Number: 3913
- Type of Transaction: REL
- Date: 06/12/00
- Time: 15:08
- EIN: C0009002
- Transaction Id: 0
- Vendor Id: E05
- Order Type:
- Order:
- Line No: 0
- From Site: GSFC
- Dest Site: EDF
- From Bldg: 32
- Dest Bldg: 1615A
- From Room: C101
- Dest Room: 1073
- From Parent EIN: 00001816
- Dest Parent EIN: 00000000
- Quantity: 1.0
- Reason Code:
- Tran #:
- Trouble ticket:
- Operator Id: ttran

At the bottom of the screen, there is a menu bar with the following options: Text, Prior, View, Find, Go, Select, Sort, Note, Help, More, Quit.

Figure 4.3.4-22. Inventory Transaction Query Screen

Table 4.3.4-19 describes the fields on the Inventory Transaction Query screen.

**Table 4.3.4-19. Inventory Transactions Query Field Descriptions
(1 of 2)**

Field Name	Data Type	Size	Entry	Description
Site	String	6	system-supplied	Code for the site that entered the transaction.
Number	Numeric	8	system-supplied	Record number of database record being observed.
Type of Transaction	String	3	system-supplied	Code assigned to the type of transaction being performed. INS – Installation; REL = Relocation; TR = Transfer; ARC = Archive; SHP = Shipment; RX = Receipt;
Date	String	2	system-supplied	Date the transaction was entered.
Time	Time	2	system-supplied	Time the transaction was entered.
EIN	String	20	system-supplied	EIN of the item involved in the transaction. The operator may zoom to the EIN table and choose an EIN, if it had been entered there previously. (See the EIN Entry Manager screen.)
Transaction Id	Numeric	6	system-supplied	Number assigned to a particular transaction.
Vendor Id	String	6	system-supplied	Code for the vendor from whom the item was purchased.
Order Type	String	2	system-supplied	Code for the type of order, if any, involved in the transaction. PO = purchase order; SO = sales order; WO = work order; VR = Return to vendor; CR = return from customer.
Order	String	6	system-supplied	Identifier for the order, if any, involved in the transaction.
Line No	Numeric	4	system-supplied	Line number of the item on the order if an order is associated with the transaction.
From Site	String	6	system-supplied	Identifier for the building losing the item.
Dest Site	String	6	system-supplied	Code for the inventory location gaining the item.
From Bldg	String	6	system-supplied	Identifier for the building losing the item.
Dest Bldg	String	6	system-supplied	Identifier for the building gaining the item.
From Room	String	6	system-supplied	Number of the room losing the item.
Dest Room	String	6	system-supplied	Number for the room gaining the item.
From Parent EIN	String	20	system-supplied	EIN of the parent item losing the item. The operator may zoom to the EIN table and choose an EIN, if it had been entered there previously. (See the EIN Entry Manager screen.)

**Table 4.3.4-19. Inventory Transactions Query Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
Dest Parent EIN	String	20	system-supplied	EIN of the parent item gaining the item. The operator may zoom to the EIN table and choose an EIN, if it had been entered there previously. (See the EIN Entry Manager screen.)
Quantity	Floating	10.1	system-supplied	Number of items in the transaction.
Reason Code	String	4	system-supplied	Code for the reason for the transaction.
CCR #	String	30	system-supplied	Identifier for the CCR authorizing the transaction.
Trouble Ticket	String	15	system-supplied	Identifier for the trouble ticket associated with the transaction.
Operator Id	String	8	system-supplied	Login ID of the operator performing the transaction.

4.3.4.2.3 ILM Report Menu

XRP-II produces numerous ILM reports. Screens that generate most of the ones associated with inventory or logistics are accessed through the ILM Report Menu (Figure 4.3.4-23). The rest are generated when EIN transactions are processed. All contain information derived from records stored only in the XRP-II database on the host where the report is requested.

Most of the screens accept record filtering parameters and, in some cases, a range of values for them. Section 3.4.5 in the *XRP-II System Reference Manual* explains how to enter range specifications. The output that results can be written to the terminal or to a file or printer. When sending to a printer, XRP-II uses the one defined as the default in the operator's environment settings at the time the program was started.

The following screens are tied to the ILM Report menu:

- ILM Inventory Reports (EDF) - for printing all items contained within the designated location(s) by central ILS managers. A cost report is included displaying the actual cost of items selected.
- ILM Inventory Reports - for printing all items contained within the designated location(s) by local site coordinators.
- EIN Structure Reports - for printing component lists of designated EIN parents in a multi-level bill format.

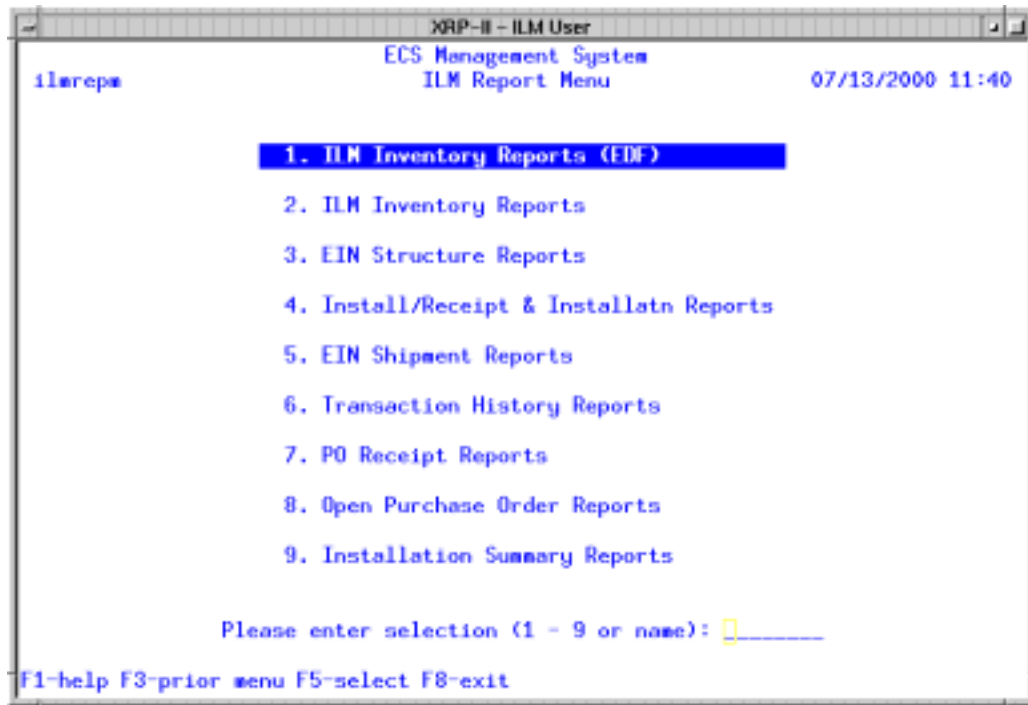


Figure 4.3.4-23. Report Menu

- Install/Receipt & Installatn Report - for printing the component list of a parent EIN for receiving organization sign off.
- EIN Shipment Reports - for printing copies of reports about shipments performed previously.
- Transaction History Reports - for printing a history of all inventory transactions logged by the system.
- PO Receipt Reports - for printing all receipts that have occurred for designated POs, vendors, or dates.
- Open Ourchase Order Reports – for printing lists of purchase orders by identifier, part, vendor and date due.
- Installation Summary Reports - retrieves and prints a list of EINs installed during a specified timeframe.

The sections below discuss these screens. Sample outputs can be found in Section 4.3.4.8.1.

4.3.4.2.3.1 ILM Inventory Reports (EDF) Screen

The ILM Inventory Reports (EDF) screen (Figure 4.3.4-24) is designed to retrieve and print all items contained within designated location(s). A cost report is included for displaying the actual cost of items selected.



Figure 4.3.4-24. ILM Inventory Reports (EDF) CHUI

Table 4.3.4-20 describes the fields on the ILM Inventory Reports screen.

Table 4.3.4-20. ILM Inventory Reports (EDF) Field Descriptions

Field Name	Data Type	Size	Entry	Description
LOCATION	String	8	optional	Code for an inventory location. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager screen.)
NOTE 1, 2	String	60	optional	A 60-character note to include in the report.
INVENTORY REPORT – BY LOCATION	Numeric	2	required	Number of copies of this report to generate.
COSTED INVENTORY REPORT	Numeric	1	required	Number of copies of this report to generate.

4.3.4.2.3.2 ILM Inventory Reports Screen

This screen is identical to the ILM Inventory Reports (EDF) screen, except it lacks the Costed Inventory Report which is not needed at the DAACs. See section 4.3.4.2.3.1 above for details about this screen.

4.3.4.2.3.3 EIN Structure Reports Screen

The EIN Structure Reports screen (Figure 4.3.4-25) is designed to retrieve and print designated parents and components in a multi-level bill format.

einstrrep] EIN STRUCTURE REPORTS: Last: 3 Current: 1

EIN OR RANGE: 00001029

NUMBER OF LEVELS TO EXPLODE: 99

EXPLOSION QUANTITY: 1

DATE OF BILL: 01/01/01 [Enter 1/1/1 for current date]

TYPE OF SORT (S=) [small-part S=sort string N=sort #]

NOTE 1: DRAFT

NOTE 2:

ENTER NUMBER OF COPIES

EIN MULTI-LEVEL REPORT: [4]

Text Prior Find Go Select Sort Note File Execute Help Core Exit

Figure 4.3.4-25. EIN Structure Reports CHUI

Table 4.3.4-21 describes the fields on the EIN Structure Reports screen.

Table 4.3.4-21. EIN Structure Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
EIN OR RANGE	String	20	required	Identifier for an EIN-controlled inventory item, or range of such items (e.g. EDF00000000001-EDF99999999999).
NUMBER OF LEVELS TO EXPLODE	Numeric	2	optional	Number of levels to display for a particular parent structure.
EXPLOSION QUANTITY	Numeric	2	optional	Quantity of each EIN to reflect in the report.
DATE OF BILL	Date	2	optional	"As of" date used in selecting records from the configuration history of the item.
TYPE OF SORT	String	1	optional; Null, S, or N	Code that specifies the field to be used for sorting the data for the report. Null is equivalent to EIN number.
NOTE 1, NOTE 2	String	40	optional	A 40-character note to include in the report.
EIN MULTI-LEVEL REPORT	Numeric	2	required	Number of copies of this report to generate.

4.3.4.2.3.4 Install/Receipt Reports Screen

This screen (Figure 4.3.4-26) is designed to allow the operator to print a report of a parent EIN configuration and send the hard copy to the receiving organization for sign off.

The screenshot shows a terminal window titled "insrep: InstallReceipt & InstallItem Reports". The main display area contains the following text:

```

insrep) INSTALL/RECEIPT REPORT:
    PARENT EIN: 00002343
    ECS Name: n000002
    DEM Description: Ultra Server 2 Model 1200 200 MHz
    Serial Number: 709F116C
    Model/Version: 1200
    Mfr/dev: SUN
    DEM Part Number: A14-UCB1-95-128EB
    Status Code: I
    Control Item ID:

    Old Location: GSFC
    Old Building: 32
    Old Room:
    Old User: 157

    ENTER NUMBER OF COPIES

    INSTALL/RECEIPT REPORT: 1
    INSTALLATION REPORT: 0
  
```

At the bottom of the screen, there is a menu bar with the following options: Text, Prior, Find, Go, Select, Sort, Note, Execute, Help, More, Quit, and Zoom.

Figure 4.3.4-26. Install/Receipt Report CHUI

Table 4.3.4-22 describes the fields on the Install/Receipt Report screen.

Table 4.3.4-22. Install/Receipt Report Field Descriptions

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	required	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
ECS Name	String	30	system-supplied	Name of the machine with which the item is associated.
OEM Description	String	40	system-supplied	Manufacturer's or vendor's description of the item.
Serial Number	String	30	system-supplied	Serial number of the item.
Model/Version	String	24	system-supplied	Model or version of the item. If the operator had chosen a known OEM Part, this field will be written with the information from this file.
Mfr/dev	String	6	system-supplied	Code for the manufacturer or developer of the item.
OEM Part Number	String	34	system-supplied	Manufacturer's or vendor's part number for the item.
Status Code	String	1	system-supplied	Code that designates the status of the item. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X= Archived
Control Item ID	String	20	system-supplied	Identifier of a corresponding version-controlled item in the BASELINE MANAGEMENT system.
Old Location	String	6	system-supplied	Code for the current inventory location where the item can be found.
Old Building	String	6	system-supplied	Identifier for the current building where the item can be found.
Old Room	String	6	system-supplied	Number of the room where the item can be found.
Old User	String	10	system-supplied	Code of the person having the item.
INSTALL/RECEIPT REPORT	Numeric	2	required	Number of copies of this report to generate.
INSTALL REPORT	Numeric	2	required	Number of copies of this report to generate.

4.3.4.2.3.5 EIN Shipment Reports Screen

The EIN Shipment Reports screen (Figure 4.3.4-27) is designed to allow the operator to print a report of a shipment that was performed previously within the system.

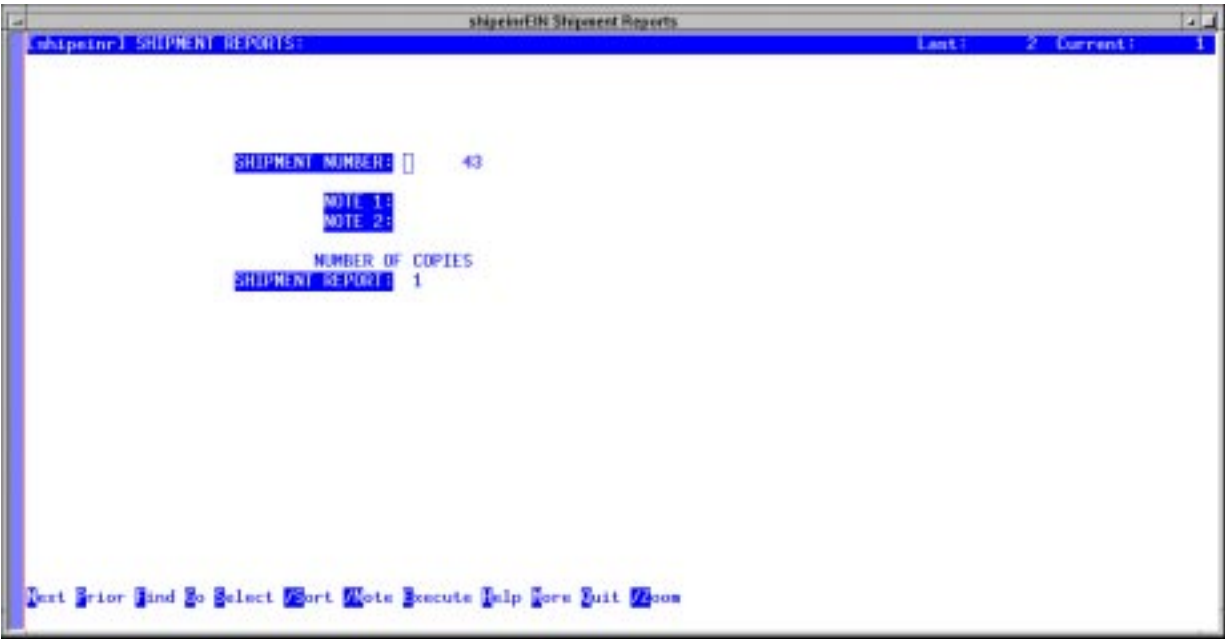


Figure 4.3.4-27. EIN Shipment Reports CHUI

Table 4.3.4-23 describes the fields on the EIN Shipment Reports screen.

Table 4.3.4-23. EIN Shipment Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
SHIPMENT NUMBER	Numeric	6	required	Sequential number assigned to a shipment
NOTE 1, NOTE 2	String	40	optional	A 40-character note to include in the report.
SHIPMENT REPORT	Numeric	2	required	Number of copies of this report to generate.

4.3.4.2.3.6 Transaction History Reports Screen

The Transaction History Reports screen (Figure 4.3.4-28) is designed to allow the operator to print a history of all transactions contained within the system.



Figure 4.3.4-28. Transaction History Reports CHUI

Table 4.3.4-24 describes the fields on the Transaction History Reports screen.

Table 4.3.4-24. Transaction History Reports Field Descriptions

Field Name	Data Type	Size		Description
DATE TO REPORT ON or RANGE	Date	2	required	Date or date range to report on.
EIN OR RANGE	String	20	optional	Identifier for an EIN-controlled inventory item, or range of such items (e.g. EDF0000000001-EDF99999999999).
RECEIPTS BY RECEIPT NUMBER	Numeric	2	required	Enter number of copies of this report to generate.
RECEIPTS BY EIN	Numeric	2	required	Enter number of copies of this report to generate.
TRANS HISTORY BY EIN	Numeric	2	required	Enter number of copies of this report to generate.
TRANS HISTORY FOR SPARES	Numeric	2	required	Enter number of copies of this report to generate.
TRANS HISTORY FOR CONSUMABLES	Numeric	2	required	Enter number of copies of this report to generate.

4.3.4.2.3.7 PO Receipt Reports Screen

The PO Receipt Reports screen (Figure 4.3.4-29) is designed to retrieve and print all receipts that have occurred for the designated vendor during a specified time interval.

Vendor PO Receipt Reports

Vendor ID or RANGE: 01N

RECEIPT DATE or RANGE: 06/11/97-02/10/99

NOTE 1:

NOTE 2:

NUMBER OF COPIES

RECEIPTS BY PART: 1

RECEIPTS BY VENDOR: 1

RECEIPT LIST BY PART: 1

Text Prior Find Go Select Sort Note Write Execute Help More Quit Window

Figure 4.3.4-29. PO Receipt Reports CHUI

Table 4.3.4-25 describes the fields on the PO Receipt Reports screen.

Table 4.3.4-25. PO Receipt Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
VENDOR ID or RANGE	String	6	optional	Code or range of codes of the vendor(s) to report.
RECEIPT DATE or RANGE	Date	2	optional	Receipt date(s) to report.
NOTE 1, NOTE 2	String	40	optional	A 40 character note to include in the report.
RECEIPTS BY PART	Numeric	2	required	Number of copies of this report to generate.
RECEIPTS BY VENDOR	Numeric	2	required	Number of copies of this report to generate.
RECEIPT LIST BY PART	Numeric	2	required	Number of copies of this report to generate.

4.3.4.2.3.8 Installation Summary Reports Screen

The Installation Summary Reports screen (Figure 4.3.4-30) is designed to retrieve and print a list of EINs installed during a specified timeframe.

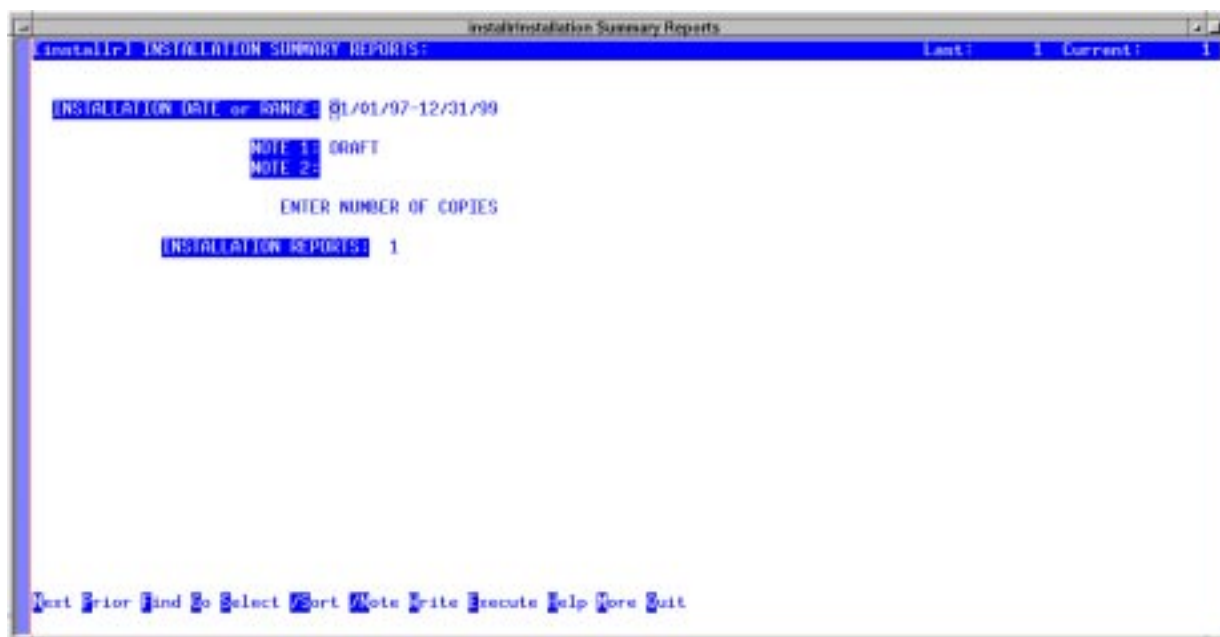


Figure 4.3.4-30. Installation Summary Reports CHUI

Table 4.3.4-26 describes the fields on the Installation Summary Reports screen.

Table 4.3.4-26. Installation Summary Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
INSTALLATION DATE or RANGE	Date	2	optional	Date or range of dates on which installation(s) occurred.
NOTE 1, NOTE 2	String	40	optional	A 40 character message to include in the report.
INSTALLATION REPORTS	Numeric	4	required	Number of copies of this report to generate.

4.3.4.2.4 Inventory Ordering Menu

ILM allows operators to designate individual OEM parts for order point control. Order point processing takes advantage of XRP-II features that monitor parts' inventory levels and automatically generates recommendations for orders. ILM can readily convert to purchase requisitions those recommendations an operator approves.

Access to order point processing routines is through the ILM Inventory Ordering menu (Figure 4.3.4-31). The menu helps the operator to navigate to the following screens:

- Order Point Parameters Manager – for identifying items to be order point-controlled and specifying control parameters for each.
- Generate Order Point Recommendations - for examining all items designated for order point control and generating a “recommended order” for each item whose inventory quantity has fallen below the control values.
- Recommended Orders Manager - for changing the status to “T” for each item to be transferred to the requisition or work order files.
- Transfer Order Point Orders - for transferring all recommendations whose status has been set to “T” to the Requisition file (if the item is coded as a Buy item) or to the Work Order file (if the item is coded as a Make item).
- Consumable Inventory Query - for viewing information about inventory items designated as consumables.
- Spares Inventory Query - for viewing information about inventory items designated as spares.
- Transfer Consumable & Spare Material - for transferring items designated as consumable or spare from one inventory location to another based on the location of a designated machine (parent EIN) with which the item is to be associated.

These screens are described in the sections below.

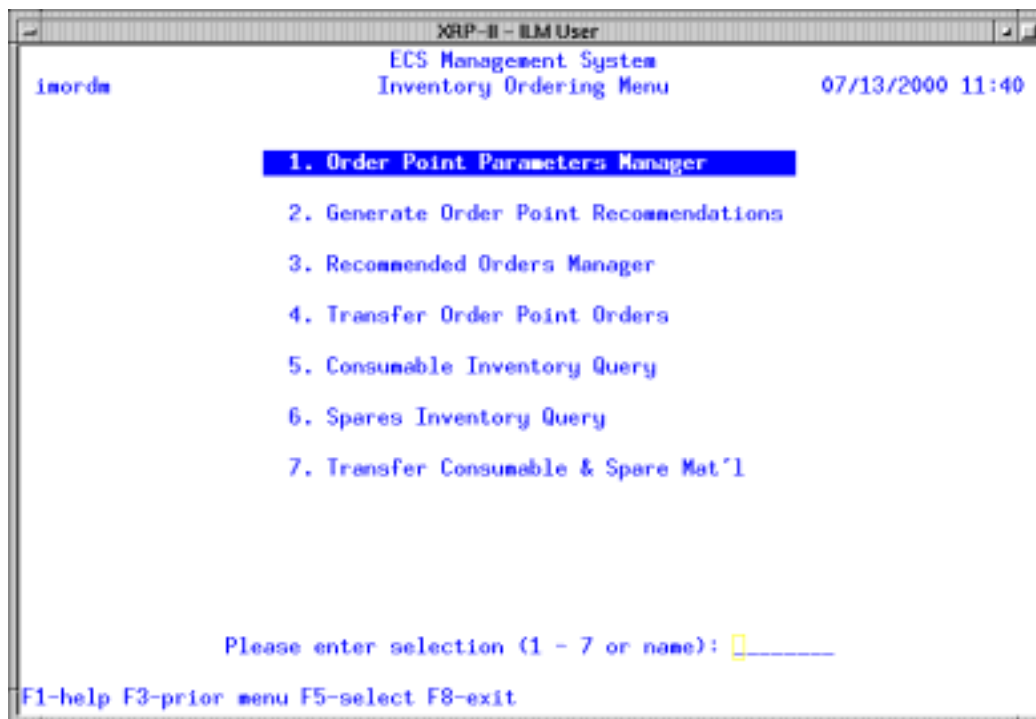


Figure 4.3.4-31. Inventory Ordering Menu

4.3.4.2.4.1 Order Point Parameters Manager Screen

This screen (Figure 4.3.4-32) allows operators to designate items to be order point-controlled and to define the parameters XRP-II is to use in determining when a new part should be ordered and in what quantity.

The screenshot shows a terminal window titled "imordpt1 Order Point Parameters Manager". The screen displays the following information:

```

imordpt1 ORDER POINT PARAMETERS MGR:

OEM PART NUMBER: 004-0040-001
OEM DESC: 4 GB HD - Internal
MOD/VER:

ORDER POLICY (0,1,2,P,Q,R,S): [P=fixed period  Q=fixed quantity  R=optional replenishment  0,1,2=MRP
                               S=MRP]

REORDER POINT: 3.0
MAX QTY ON HAND & ON ORDER: 6.0
REVIEW PERIOD (DAYS): 3
NEXT REVIEW DATE: 12/09/99

MULTIPLE ORDER QUANTITY: 5.0
MINIMUM ORDER QUANTITY: 2.0
MAXIMUM ORDER QUANTITY: 5.0

ADD: [F]-help [C]-clear [E]-exit [Q]-mode [D]-default
Replace mode
  
```

Figure 4.3.4-32. Order Point Parameters Manager CHUI

Table 4.3.4-27 describes the fields on the Order Point Parameters Manager screen.

**Table 4.3.4-27. Order Point Parameters Manager Field Descriptions
(1 of 2)**

Field Name	Data Type	Size	Entry	Description
OEM PART NUMBER	String	34	required	Manufacturer's or vendor's part number. The operator may zoom to the OEM Part table and choose the number, if it had been entered there previously. (See the OEM Part Numbers section.)
OEM DESC	String	40	system-supplied	Manufacturer's or vendor's description for the part.
MOD/VER	String	24	system-supplied	Model or version of the part.
ORDER POLICY	String	1	optional; 0, 1, 2, P, Q, R, or S	Type of ordering policy such as P = Fixed period, Q = Fixed quantity etc.
REORDER POINT	Floating	10.1	optional	Quantity at which reorder of the part should occur.

**Table 4.3.4-27. Order Point Parameters Manager Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
MAX. QTY ON HAND & ON ORDER	Floating	10.1	optional	Maximum number of items in stock plus the number on order.
REVIEW PERIOD	Numeric	3	optional	Number of days in the order interval. Applicable only if the order policy is P, Q, or 2.
NEXT REVIEW DATE	Date	2	optional	Date the system is to next evaluate whether to recommend placing an order for the part.
MULTIPLE ORDER QUANTITY	Floating	9.1	optional	Number of items to include in a multiple parts/items order.
MINIMUM ORDER QUANTITY	Floating	9.1	optional	Minimum number of items to order or reorder.
MAXIMUM ORDER QUANTITY	Floating	9.1	optional	Maximum number of items to order or reorder.

4.3.4.2.4.2 Generate Order Point Recommendations Screen

Operators use the Generate Order Point Recommendations screen (Figure 4.3.4-33) to generate recommendations to order parts whose inventory levels have fallen below their respective control values. Control values are set via the Order Point Parameters Manager (see Section 4.3.4.2.5.1). Type “Y” at the prompt on the screen to initiate the process.



Figure 4.3.4-33. Generate Order Point Recommendations CHUI

4.3.4.2.4.3 Recommended Orders Manager Screen

This screen (Figure 4.3.4-34) is designed to permit operators to review system-generated recommendations for ordering order point-controlled parts and to designate which ones are to be transferred to the requisition or work order files for action. Recommended orders have status “R”. Changing a status to “T” approves the order for transfer, which is done via the Transfer Order Point Orders screen (see Section 4.3.4.2.4.4). Changing it to “X” will cause it to be deleted the next time order point recommendations are generated.

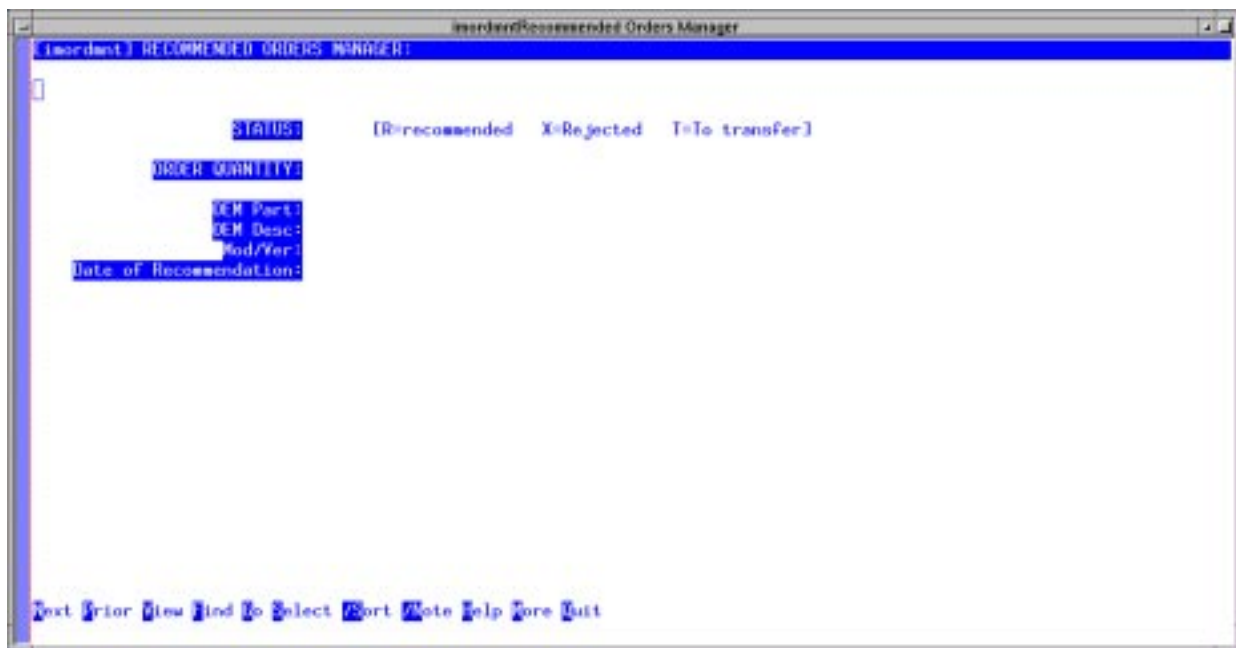


Figure 4.3.4-34. Recommended Orders Manager CHUI

Table 4.3.4-28 describes the fields on the Recommended Orders Manager screen.

**Table 4.3.4-28. Recommended Orders Manager Field Descriptions
(1 of 2)**

Field Name	Data Type	Size	Entry	Description
STATUS	String	1	optional; R, X, or T	Code for the status of the recommended order. R = recommended; X = rejected; T = to transfer.
ORDER QUANTITY	Floating	9.1	optional	Quantity to order.
OEM Part	String	34	system- supplied	Manufacturer's or vendor's identifier for an item.
OEM Desc	String	40	system- supplied	Manufacturer's or vendor's description for an item.

**Table 4.3.4-28. Recommended Orders Manager Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
Mod/Ver	String	24	system-supplied	Model or version of the item.
Date of Recommendation	Date	2	system-supplied	Date the recommendation was generated.

4.3.4.2.4.4 Transfer Order Point Orders Screen

The Transfer Order Point Orders screen (Figure 4.3.4-35) is designed to transfer order recommendations whose status had been set to “T” to a material requisition file. Orders for to be purchased (i.e., coded as “B” for buy part in the EIN file) get transferred to the purchase order requisition file, while parts to be manufactured (i.e., coded as “M” for make part in the EIN file)s get transferred to the work order file. Type “Y” in response to the prompt on the screen to initiate the process.

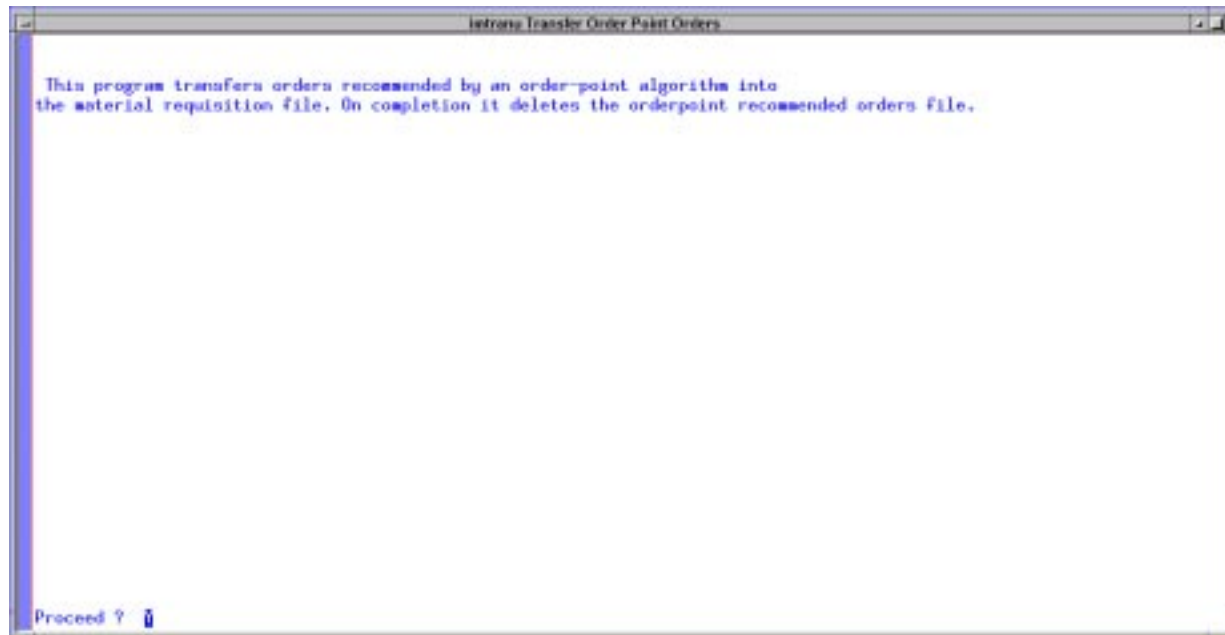


Figure 4.3.4-35. Transfer Order Point Orders CHUI

4.3.4.2.4.5 Consumable Inventory Query Screen

The Consumable Inventory Query screen (Figure 4.3.4-36) allows the operator to view the inventory for only those items designated as consumable and, at the DAACs, for only those items at the local DAAC’s inventory locations.



Figure 4.3.4-36. Consumable Inventory Query CHUI

Table 4.3.4-29 describes the fields on the Consumable Inventory Query screen.

Table 4.3.4-29. Consumable Inventory Query Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Location	String	8	system-supplied	Code for the inventory location where the item can be found.
Item	String	34	system-supplied	EIN for the consumable item. This value is obtained from stock location file where it had been stored during receiving and/or transfer processing. The value corresponds to the EIN of the part in the EIN file which, for consumables, should be the same as the OEM part number for the item.
Building	String	6	system-supplied	Identifier for the building where the item can be found.
Loc Desc	String	30	system-supplied	Name of the inventory location where the item can be found.

Table 4.3.4-29. Consumable Inventory Query Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Location Type	String	1	system-supplied	Code that distinguishes among inventory locations according to purpose or function. Null or S = stock, R = received material, N = non-nettable material, W = work center, A = archive.
OEM Part	String	34	system-supplied	Manufacturer's or vendor's identifier for an item. For consumable items, this value should be the same as Item above.
OEM Desc	String	40	system-supplied	Manufacturer's or vendor's description of the item.
Quantity	Floating	10.1	system-supplied	Quantity of the items for the inventory location at the building.
Date of Last Activity	Date	2	system-supplied	Date of last transaction performed for the item at the inventory location and building.

4.3.4.2.4.6 Spares Inventory Query Screen

Operators use the Spares Inventory Query screen (Figure 4.3.4-37) to browse inventory records of spare items.



Figure 4.3.4-37. Spares Inventory Query CHUI

Table 4.3.4-30 describes the fields on the Spares Inventory Query screen.

Table 4.3.4-30. Spares Inventory Query Field Description

Field Name	Data Type	Size	Entry	Description
Location	String	8	system-supplied	Code for the inventory location where the item can be found.
Item	String	34	system-supplied	EIN for the spare item. This value is obtained from stock location file where it had been stored during receiving and/or transfer processing. The value corresponds to the EIN of the part in the EIN file.
Bldg	String	6	system-supplied	Identifier for the building where the item can be found.
Loc Desc	String	30	system-supplied	Name of the inventory location where the item can be found.
Location Type	String	1	system-supplied	Code that distinguishes among inventory locations according to purpose or function. Null or S = stock, R = received material, N = non-nettable material, W = work center, A = archive.
OEM Part	String	34	system-supplied	Manufacturer's or vendor's identifier for an item. For consumable items, this value should be the same as Item above.
OEM Desc	String	40	system-supplied	Manufacturer's or vendor's description of the item.
Date of Last Activity	Date	2	system-supplied	Date of last transaction performed for the item at the inventory location and building.

4.3.4.2.4.7 Transfer Consumable & Spare Mat'l Screen

This screen (Figure 4.3.4-38) is designed to allow the operator to transfer a quantity of an item designated as consumable or spare to the inventory location, building, and room of an operator-specified parent EIN, effectively issuing or transferring the item(s) from one location to another.

After entering values that define the transaction, type “C” to check it, then “E” to process it. Checking causes XRP-II to validate that needed information is not missing and to warn if either inventory levels are insufficient at the specified location and building or if the transaction establishes the building as a new stock location. Processing causes XRP-II to add the item(s) to the configuration of the parent EIN and adjust item counts at both the losing and gaining inventory locations. It also records the event in the inventory transaction log. (See the Inventory Transaction Query section, 4.3.4.2.2.6).

Note: This screen does not change the status of the item transferred.

Note: Consumables transferred to a parent EIN are not listed on EIN structure screens since consumables are not considered EINs.

Batch Number: 05
 Date: 09/12/99
 OEM Part: RM/MED-CLN
 Quantity: 2.0
 Reason Code: 04
 From Location: EDF
 Building: ECS Development Facility
 Room: 1616
 New Parent Lin: 00000013

Menu: Test Prior View Find Go Select Report Note Check Execute Help Exit

Figure 4.3.4-38. Transfer Consumable & Spare Mat'l CHUI

Table 4.3.4-31 describes the fields on the Transfer Consumable & Spare Material screen.

**Table 4.3.4-31. Transfer Consumable & Spare Material
Field Descriptions (1 of 2)**

Field Name	Data Type	Size	Entry	Description
BATCH NUMBER	Numeric	8	required	Identifier for the transaction. Type <RETURN> to let the system assign the next number in sequence.
DATE	String	2	optional; defaults to current date	Date of the transaction.
OEM PART	String	34	optional	Manufacturer's or vendor's part number for the consumable or spare item(s) being transferred.
QUANTITY	Floating	10.1	optional; defaults to 0.0	Quantity of the item to transfer.
REASON CODE	String	4	optional	Code for the reason for the transfer. The operator may zoom to the Reason Code table and choose the code, if it had been entered there previously. (See the Reason Code Maintenance section.)

**Table 4.3.4-31. Transfer Consumable & Spare Material
Field Descriptions (2 of 2)**

Field Name	Data Type	Size	Entry	Description
FROM LOCATION	String	6	required	Code for the inventory location where the item can be found. The operator may zoom to the Inventory Location and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
Type	String	1	system-supplied	Code that distinguishes among inventory locations according to purpose or function. Null or S = stock, R = received material, N = non-nettable material, W = work center, A = archive.
BUILDING	String	6	optional	Identifier for the building where the item can be found.
ROOM	String	6	optional	Room number where the item can be found.
NEW PARENT EIN	String	20	required	EIN for the parent item whose inventory location, building, and room number are to be used as the destination for the transfer.

4.3.4.2.5 PO/Receiving Menu

ILM's PO/Receiving functions support procurement and receipt of property against purchase orders (PO's). The PO/Receiving menu (Figure 4.3.4-39) helps operators navigate to the following set of screens:

- Material Requisition Manager – for initiating the process of requisitioning consumables or spares. Requisitions require approval of the procurement manager before they can be added to a purchase order.
- Material Requisition Master – for buyers to examine all manual and system-generated requisitions for placing purchase orders with vendors.

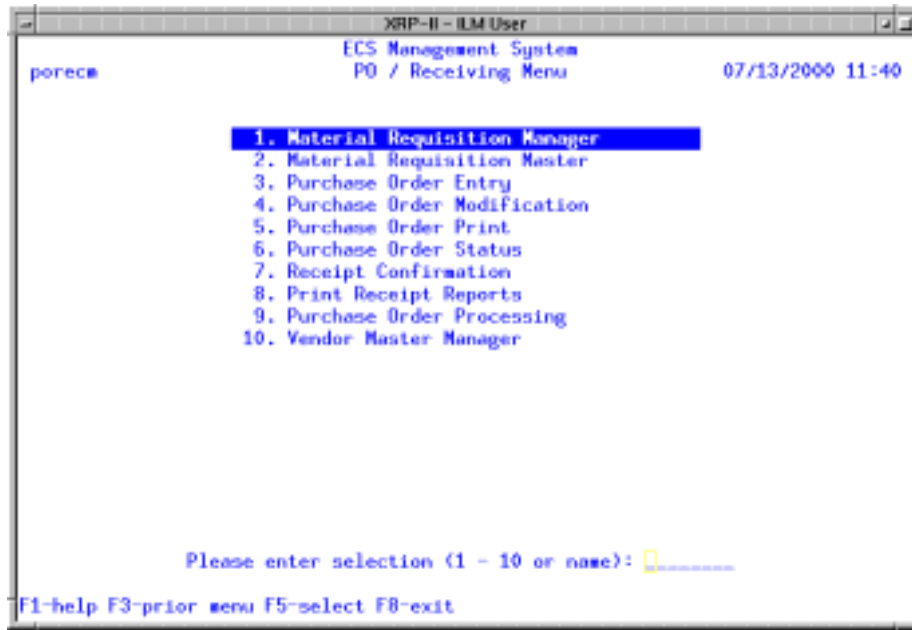


Figure 4.3.4-39. PO/Receiving Menu

- Purchase Order Entry – for entering new purchase orders.
- Purchase Order Modification – for updating information about a purchase order and its line items.
- Purchase Order Print – for printing a purchase order document for subsequent mailing to the vendor and/or copies for the receiving dock.
- Purchase Order Status – for browsing information about any purchase order.
- Receipt Confirmation – for recording receipt of materials against a purchase order. (This is the primary means of adding items to the EIN catalog.)
- Print Receipt Reports – for printing copies of past receipt reports.
- Purchase Order Processing – for closing open PO's that meet established criteria.
- Vendor Master Manager – for maintaining a reference list of vendors and their addresses.

These screens are described in the sections below.

4.3.4.2.5.1 Material Requisition Manager Screen

The Material Requisition Manager screen (Figure 4.3.4-40) allows operators to create requisitions manually for items to be purchased. Operators designated as authorized buyers can subsequently use the requisitions when adding line items on purchase orders. (See Section 4.3.4.2.5.3) The screen displays for an operator only those requisitions that have been entered by that operator.

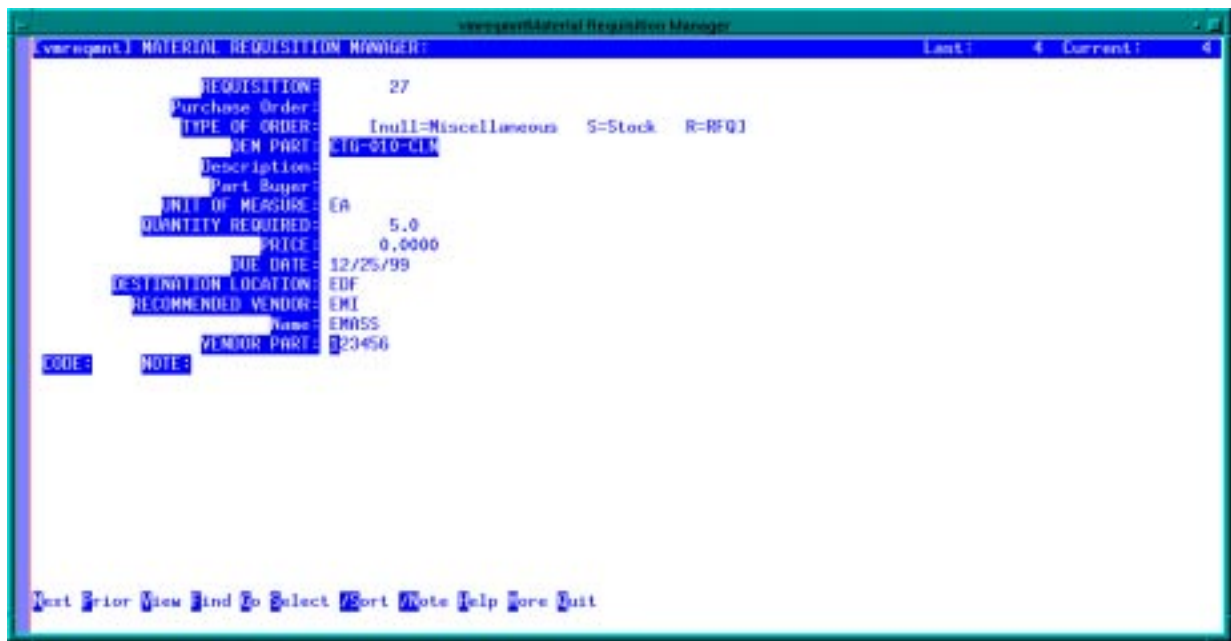


Figure 4.3.4-40. Material Requisition Manager CHUI

Table 4.3.4-32 describes the fields on the Material Requisition Manager screen.

Table 4.3.4-32. Material Requisition Manager Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
REQUISITION	Numeric	8	required	This field is the requisition number assigned to this Material Requisition. It automatically generated when the operator presses the <ENTER> key.
Purchase Order	String	10	system-supplied	Identifier for the purchase order to which the requisition has been transferred.
TYPE OF ORDER	String	1	required; null, S, or R	Code that distinguishes among purchase orders according to purpose. Null = Misc.; S = Stock; R = RFQ
OEM PART	String	34	required	Manufacturer's or vendor's part number for the item. The operator may zoom to the OEM part table and choose the identifier, if it had been entered there previously. (See the OEM Part Numbers section.)
Description	String	40	system-supplied	Manufacturer's or vendor's description of the item.

Table 4.3.4-32. Material Requisition Manager Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Part Buyer	String	6	system-supplied	Code for the person authorized to purchase the item. The value is obtained from the EIN file, if the part and its buyer had been recorded there previously.
UNIT OF MEASURE	String	2	optional	Purchase unit of measure used for buying the item. The operator may zoom to the UOM table and choose the unit of measure, if it had been entered there previously. (See the UOM Manager section.)
QUANTITY REQUIRED	Floating	9.1	optional	Number of item to order.
PRICE	Floating	11.4	optional	Expected item price.
DUE DATE	Date	2	optional; default is “**/**/**”	Date by which the item is required. By convention, the value “**/**/**” is interpreted as, “as soon as possible”.
DESTINATION LOCATION	String	6	optional	Code for the inventory location where the item is to be added to stock. The operator may zoom to the Inventory Locations table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
RECOMMENDED VENDOR	String	6	optional	Code identifying the preferred vendor. Use the /Zoom screen to assist your selection. ILM fills in the name fields for you when you make this selection.
Name	String	30	system-supplied	Name of the vendor. The value is obtained from the Vendor Master record corresponding to the recommended vendor's code.
VENDOR PART	String	16	optional	Vendor's part number if it differs from the OEM part number entered earlier on this screen.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A 60 character note associated with the item.

4.3.4.2.5.2 Material Requisition Master Screen

The Material Requisition Master screen (Figure 4.3.4-41) allows operators to browse, delete, and update all requisitions in the system, as well as to add new ones. Accordingly, its use is often restricted to certain employees, such as buyers.

Figure 4.3.4-41. Material Requisition Master CHUI

Table 4.3.4-33 describes the fields on the Material Requisition Master screen.

Table 4.3.4-33. Material Requisition Master Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
TYPE OF ORDER	String	1	optional; null, S, or Q	Code that distinguishes among purchase orders according to purpose. Null = Misc.; S = Stock; R = RFQ
PERSON REQUESTING	String	8	system-supplied	Name of person completing the requisition. Automatically filled in from the operator's login ID.
OEM PART	String	34	optional	Manufacturer's or vendor's part number for the item. The operator may zoom to the OEM part table and choose the identifier, if it had been entered there previously. (See the OEM Part Numbers section.)
Description	String	40	system-supplied	Manufacturer's or vendor's description of the item.

Table 4.3.4-33. Material Requisition Master Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
PART BUYER	String	6	optional	Code for the person authorized to purchase the item. The value is obtained from the EIN file, if the part and its buyer had been recorded there previously.
UNIT OF MEASURE	String	2	optional	Purchase unit of measure used for buying the item. The operator may zoom to the UOM table and choose the unit of measure, if it had been entered there previously. (See the UOM Manager section.)
QUANTITY REQUIRED	Floating	9.1	optional	Number of item to order.
PRICE	Floating	11.4	optional	Expected item price.
DUE DATE	Date	2	system-supplied	Date by which the item is required. By convention, the value "***/**/**" is interpreted as, "as soon as possible".
DESTINATION LOCATION	String	6	optional	Code for the inventory location where the item is to be added to stock. The operator may zoom to the Inventory Locations table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.)
REQUISITION	Numeric	8	required	The requisition number assigned to this Material Requisition. It is automatically generated when the operator presses the <ENTER> key.
PURCHASE ORDER	String	10	system-supplied	Identifier for the purchase order to which the requisition has been transferred. The field may be modified only if the new value has been entered previously in the Purchase Order file.
RECOMMENDED VENDOR	String	6	optional	Code identifying the preferred vendor. The operator may zoom to the Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.) ILM fills in the name field for you when you make this selection.
Name	String	30	system-supplied	Name of the vendor. The value is obtained from the Vendor Master record corresponding to the recommended vendor's code.
VENDOR PART	String	16	optional	Vendor's part number if it differs from the OEM part number entered earlier on this screen.
DATE ENTERED	Date	2	system-supplied	Date the requisition was created.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A 60 character note associated with the item.

4.3.4.2.5.3 Purchase Order Entry Screen

The Purchase Order Entry screen (Figure 4.3.4-42) is used to create new purchase orders. As such, it is always presented to the operator in ADD mode when invoked. Enter data to identify and describe the purchase order itself, using Table 4.3.4-34 as a guide. Then, use the **Items** command to invoke the screen's items page (Figure 4.3.4-43) in order to specify the items to purchase. The items page too is presented in ADD mode.

The screenshot shows a terminal window titled "vmwordentPurchase Order Entry". The interface is a text-based form with the following fields and values:

- PURCHASE ORDER: CCH001190T
- SHIP TO SITE: EDF
- VENDOR TO: SGI
- ADDRESS SEQUENCE: 0
- BUYER: 03
- PURCHASE TERMS CODE: N3
- VENDOR POC: Stephanie Blair
- TYPE OF ORDER CODE: S
- ESTIMATED DUE DATE: 08/28/00
- OUTSIDE CONTRACTOR (Y/N): N
- CCR #: 99-1457T
- TROUBLE TICKET:
- NOTE:

At the bottom, there is a menu bar with options: Exit, Prior, New, Find, Go, Select, Abort, Note, Items, Help, Done, Exit.

Figure 4.3.4-42. Purchase Order Entry CHUI

Table 4.3.4-34 describes the fields on the Purchase Order Entry screen.

Table 4.3.4-34. Purchase Order Entry Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PURCHASE ORDER	String	10	required	Identifier for the purchase order. Press <RETURN> to have the system provide the next available number.
SHIP-TO SITE	String	6	optional; defaults to the local site	Code for the site to which the material is to be shipped. The default is the local site. The operator may zoom to the Site Code table to choose the code, if it had been entered there previously. (See the Site Master Manager section.)

Table 4.3.4-34. Purchase Order Entry Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A 60 character note associated with the item.
BILL-TO SITE	String	6	optional	Code for the site which the vendor is to bill. The default is the local site. The operator may zoom to the Site Code table and choose the code, if it had been entered there previously. (See the Site Master Manager section.)
VENDOR ID	String	6	optional	Code for the vendor from whom items are being purchased.
ADDRESS SEQUENCE	Numeric	2	optional	Code designating which of the vendor's addresses to use.
BUYER	String	6	optional	Code for a person authorized to purchase the item. The operator may zoom to the Buyer table and choose the code, if it had been entered there previously. (See the Buyer Manager section.)
PURCHASE TERMS CODE	String	2	optional	Code for the terms under which the purchase is being made. The operator may zoom to the Purchase Terms table and choose the code, if it had been entered there previously. (See the Sales/Purchase Terms Maintenance section.)
VENDOR POC	String	30	optional	Name of the person designated as the point of contact at the vendor facility.
TYPE OF ORDER CODE	String	1	optional; defaults to "S"	Code that distinguishes among purchase orders according to purpose. This field should always be left at the default of 'S'.
ESTIMATED DUE DATE	Date	2	optional; defaults to 45 days past the current date	Date the material being ordered is expected.
OUTSIDE CONTRACTOR (Y/N)	String	1	optional; "Y"	Flag indicating if the vendor is an outside contractor. This field should always be set to "Y".
CCR #	String	30	optional	Identifier for the CCR authorizing the purchase.
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the purchase order.

When adding a line item to a purchase order, pressing <ENTER> at the sequence number field lets XRP-II assign the next number available, and entering a requisition number automatically inserts the item's OEM part number, destination location, due date, quantity, and price values from the requisition file. Line item data will appear on purchase order reports and be used later by the Receiving process.

The items page itself has an **Items** bottom-line command and two other commands not found on most screens. This **Items** command invokes a Material Requisition Query screen (Figure 4.3.4-44) for browsing the records in the requisitions file. A **Duplicate** command lets operators conveniently add additional copies of a line item for which different delivery dates are desired. A **Changes** command lets operators view the log of any changes that may have been made to the line item's quantity or price via the Purchase Order Modification screen (see Section 4.3.4.2.5.4).

vmordent1 PURCHASE ORDER ENTRY: Last: 1 Current: 1
Purchase Order: CCH0011901 Ship To Site: EDF Bill To Site: EDF Vendor Id: 561 Last: 2 Current: 2

#	REQ#	OEM PART	QUANTITY	DOE DATE	ITEM PRICE
1	17	PRSH10SCSI	2	02/18/00	0.00
DESC: SCSI -2 10MHZ/16BIT DIFFERENTIAL					
MOD/VER:					
DEST: EDF BUDG: 1616					
2	15	HUR-PC2	2	02/18/00	0.00
DESC: I/O4 BOARD					
MOD/VER:					
DEST: EDF BUDG: 1616					

Text Prior View Find Go Select Sort Note Duplicate Item Changes Help Exit

Figure 4.3.4-43. Items Page for Purchase Order Entry CHUI

Table 4.3.4-35 describes the fields on the Items Page for Purchase Order Entry.

Table 4.3.4-35. Items Page for Purchase Order Entry Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
#	Numeric	4	required	Sequence number for the purchase order's line items.
REQN	Numeric	8	optional	Number identifying the requisition satisfied by this line item.
OEM PART	String	34	required	The manufacturer's part number of the item(s) you are ordering. The field, DESC, is automatically filled with the selected part's description when you make this selection. The operator may zoom to the OEM Part table and choose the number, if it had been entered there previously. (See the OEM Part Numbers section.)

**Table 4.3.4-35. Items Page for Purchase Order Entry Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
QUANTITY	Floating	10.1	required; default is "1"	Number of items on order.
DUE DATE	Date	2	optional; default is 45 days past the current date	Date the item is due to be received.
ITEM PRICE	Floating	11.4	optional; default is the cost from the OEM Part table	Purchase cost of the item. Same as COST.
DESC	String	40	optional	A description of the item. If a value for OEM part number had been entered, the system supplies the manufacturer's or vendor's description if one is available.
MOD/VER	String	24	optional	Model or Version of the item.
DEST	String	6	optional; default is the PO's value for Ship-to Branch	Code for the inventory location where the item is to be shipped. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.).
BDLG	String	6	system- supplied	Identifier for the building where the item is to be shipped.

Figure 4.3.4-44. Material Requisition Query CHUI

Table 4.3.4-36 describes the fields on the Material Requisition Query screen.

Table 4.3.4-36. Material Requisition Query Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Requisition	Numeric	8	system-supplied	The requisition number assigned to this Material Requisition.
Purchase Order	String	10	system-supplied	Identifier for the purchase order to which the requisition has been transferred.
Type of Order	String	1	system-supplied	Code that distinguishes among purchase orders according to purpose. Null = Misc.; S = Stock; R = RFQ
Person Requesting	String	8	system-supplied	Name of person completing the requisition.
OEM Part	String	34	system-supplied	Manufacturer's or vendor's part number for the item.
Description	String	40	system-supplied	Manufacturer's or vendor's description of the item.
uom	String	2	system-supplied	Purchase unit of measure used for buying the item.
Quantity Required	Floating	9.1	system-supplied	Number of item to order.

Table 4.3.4-36. Material Requisition Query Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Price	Floating	11.4	system-supplied	Expected item price.
Due Date	Date	2	system-supplied	Date by which the item is required. By convention, the value “**/**/” is interpreted as, “as soon as possible”.
Destination Location	String	6	system-supplied	Code for the inventory location where the item is to be added to stock.
Sublocation	String	6	system-supplied	Identifier for the building where the item is to be added to stock.
Destination Account	String	6	system-supplied	Identifier for the financial account for the requisition.
Recommended Vendor	String	6	system-supplied	Code identifying the preferred vendor.
Name	String	30	system-supplied	Name of the vendor. The value is obtained from the Vendor Master record corresponding to the recommended vendor’s code.
Vendor Part	String	16	system-supplied	Vendor’s part number if it differs from the OEM part number entered earlier on this screen.
Date Entered	Date	2	system-supplied	Date the requisition was created.

4.3.4.2.5.4 Purchase Order Modification Screen

The Purchase Order Modification screen (Figure 4.3.4-45) is used to update existing, open purchase orders; that is, orders with their status code “blank” (Active) or “R” (Released). Changing the quantity of a line item, its price, or expected date are common reasons to use this screen, as is adding a new line item to the purchase order. Changing the order’s status to “C” (Complete) or “X” (Cancelled) causes the status to change in each line item. It also renders the order closed. Closed orders may be viewed through the Purchase Order Status screen only. This screen functions in much the same way as the Purchase Order Entry screen discussed in the previous section, but it includes a feature that tracks the history of changes to the quantity or price of a line item, viewable via the Changes bottom-line command.

Table 4.3.4-37 describes this screen’s fields, while Figure 4.3.4-46 and Table 4.3.4-38 describe its items page. The Material Requisition Query screen, available from this screen’s item page, is the same as the one for Purchase Order Entry’s item page. See Section 4.3.4.2.5.3 for the description.

vmordmod Purchase Order Modification

Last: 020 Current: 456

PURCHASE ORDER: 0CH0011901 CHANGE NUMBER: 0
 SHIP-TO BRANCH: EDF BILL-TO BRANCH: EDF
 VENDOR ID: SGI
 ADDRESS SEQUENCE: 0 Silicon Graphics Inc
 STATUS: Inval=Active R=Released C=Complete X=Canceled
 BUYER: 03 Marsha Wickles-Johnson
 PURCHASE TERMS CODE: M3 Net 30
 VENDOR POC: Stephanie Blair
 TYPE OF ORDER CODE: S
 OUTSIDE CONTRACTOR (YN): N
 CCR #: 99-1457T
 TROUBLE TICKET:
 ESTIMATED DUE DATE: 08/28/00
 ENTRY DATE: 07/14/00 ORDER START DATE: 08/28/00
 OPERATOR ID: xrpada
 NOTE:
 Total: 0.00

Text Prior View Find Go Select Abort Note Items Help More Quit

Figure 4.3.4-45. Purchase Order Modification CHUI

Table 4.3.4-37 describes the fields on the Purchase Order Modification screen.

Table 4.3.4-37. Purchase Order Modification Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PURCHASE ORDER	String	10	required	Identifier for the purchase order.
CHANGE NUMBER	Numeric	3	optional	Number identifying the revision level for the PO.
SHIP-TO BRANCH	String	6	optional	Code for the site to which the material is to be shipped. The default is the local site. The operator may zoom to the Site Code table and choose the code, if it had been entered there previously. (See the Site Master Manager section.)
BILL-TO BRANCH	String	6	optional	Code for the site the vendor is to bill. The default is the local site. The operator may zoom to the Site Code table and choose the code, if it had been entered there previously. (See the Site Master Manager section.)
VENDOR ID	String	6	optional	Code for the vendor from whom items are being purchased.
ADDRESS SEQUENCE	Numeric	2	optional	Code designating which of the vendor's addresses to use.
STATUS	String	1	optional; null, R, C, or X	Code for the status of the purchase order. Null = Active; R = Released; C = Completed; X = Cancelled. NOTE: The system updates the status to "C" automatically when certain criteria are met. See the Purchase Order Processing section for details.
BUYER	String	6	optional	Code for a person authorized to purchase the item. The operator may zoom to the Buyer table and choose the code, if it had been entered there previously. (See the Buyer Manager section.)
PURCHASE TERMS CODE	String	2	optional	Code for the terms under which the items are being purchased. The operator may zoom to the Sales/Purchase Terms Code file and choose the code, if it had been entered there previously. (See the Sales/Purchase Terms Manager section.)
VENDOR POC	String	30	optional	Name of the person designated as the point of contact at the vendor facility.
TYPE OF ORDER CODE	String	1	optional	Code that distinguishes among purchase orders according to purpose. This field should always be left at the default of 'S'.
OUTSIDE CONTRACTOR (YN)	String	1	optional; Y or N	Flag indicating if the vendor is an outside contractor. This field should always be set to "Y".

Table 4.3.4-37. Purchase Order Modification Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
CCR #	String	30	optional	Identifier for the CCR authorizing the purchase.
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the purchase order.
ESTIMATED DUE DATE	Date	2	optional	Date the material being ordered is expected.
ENTRY DATE	Date	2	optional	Date the purchase order was created.
ORDER START DATE	Date	2	optional	Date the purchase order should be released in order for the material to be received when due.
OPERATOR ID	String	8	optional	Login ID of the operator who added this order to the database.
NOTE	String	60	optional	A 60 character note attached to the PO.
Total	Numeric	10	system-supplied	Value of the order.

vmsdmodPurchase Order Modification

Last: 827 Current: 1

Purchase Order: 0000001003 Change Number: 0 Ship-to Branch: EDC Bill-to Branch: SMC

#	REQ	DEM PART	QUANTITY	DUE DATE	ITEM PRICE
1	22	7101-00	1	03/16/00	0.00

DESC: Packet Engine

MOD/VER:

DEST: EDC BLDG:

STATUS: R

2

1

DESC:

MOD/VER:

DEST: EDC BLDG:

STATUS: R

ADD: F1-help F2-clear F3-exit F4-mode F5-default F6-pow

Replace mode

Figure 4.3.4-46. Items Page for Purchase Order Modification CHUI

Table 4.3.4-38 describes the fields on the Items Page for Purchase Order Modification screen.

**Table 4.3.4-38. Items Page for Purchase Order Modification
Field Descriptions**

Field Name	Data Type	Size	Entry	Description
#	Numeric	4	required	Sequence number for the purchase order's line items.
REQN	Numeric	8	optional	Number identifying the requisition satisfied by this line item.
OEM PART	String	34	required	The manufacturer's part number of the item(s) you are ordering. The field, DESC, is automatically filled with the selected part's description when you make this selection. The operator may zoom to the OEM Part table and choose the number, if it had been entered there previously. (See the OEM Part Numbers section.)
QUANTITY	Floating	10.1	required; default is "1"	Number of items on order.
DUE DATE	Date	2	optional; default is 45 days past the current date	Date the item is due to be received.
ITEM PRICE	Floating	11.4	optional; default is the cost from the OEM Part table	Purchase cost of the item. Same as COST.
DESC	String	40	optional	A description of the item. If a value for OEM part number had been entered, the system supplies the manufacturer's or vendor's description if one is available.
MOD/VER	String	24	optional	Model or Version of the item.
DEST	String	6	optional; default is the PO's value for Ship-to Branch	Code for the inventory location where the item is to be shipped. The operator may zoom to the Inventory Location table and choose the code, if it had been entered there previously. (See the Inventory Location Manager section.).
BDLG	String	6	system-supplied	Identifier for the building where the item is to be shipped.
STATUS	String	1	optional	Code for the status of the item. Null = Inactive; F = Firm planned; R = Released; C= Complete; X = Cancelled

4.3.4.2.5.5 Purchase Order Print Screen

The Purchase Order Print screen (Figure 4.3.4-47) prints user-specified Purchase Orders for mailing to the vendor or providing copies to the receiving dock. The system prints "active"

purchase orders only (i.e., those having a null status code), unless the operator had specified to include orders previously released.

Enter values to be used as criteria for selecting which purchase orders to print, then invoke the Execute bottom-line command.

Note: Printing an active purchase order in effect releases it, and causes the system to change its status to “R”.

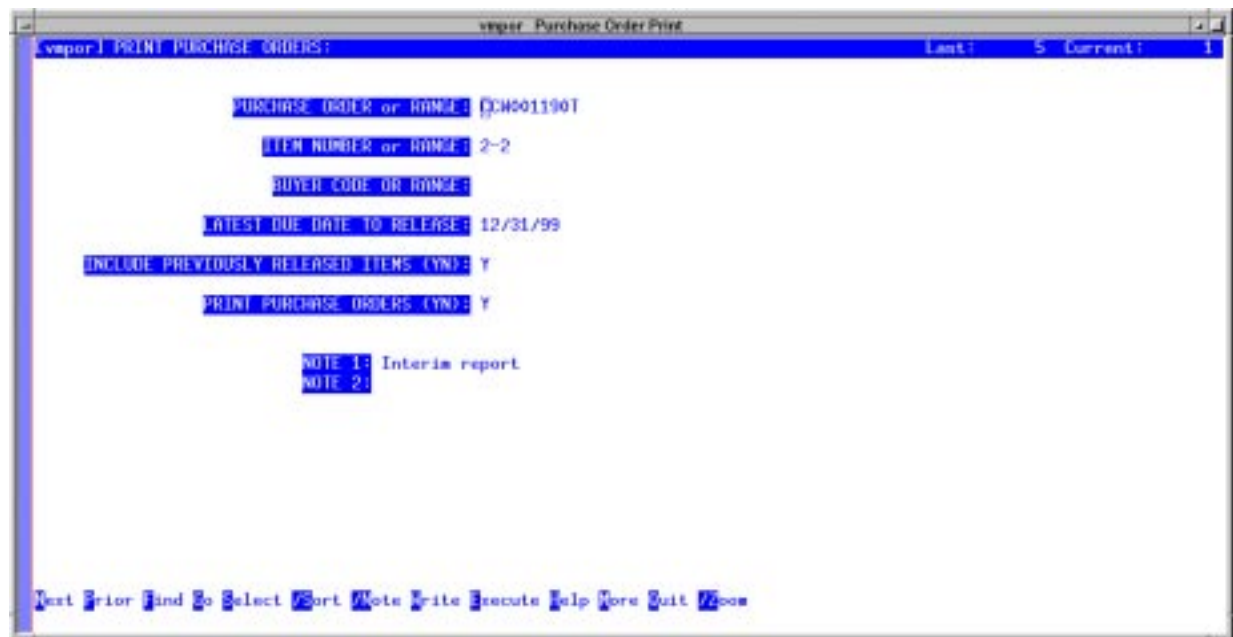


Figure 4.3.4-47. Purchase Order Print CHUI

Table 4.3.4-39 describes the fields on the Purchase Order Print screen.

Table 4.3.4-39. Purchase Order Print Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
PURCHASE ORDER or RANGE	String	10	required	Identifier for the purchase order. The operator may zoom to the Purchase Order table and choose an identifier, if it had been entered there previously. (See the Purchase Order entry section.)
ITEM NUMBER or RANGE	String	8	optional	Item number(s) to report.

Table 4.3.4-39. Purchase Order Print Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
BUYER CODE OR RANGE	String	2	optional	Code used to identify the buyer. The operator may zoom to the Buyer table and choose the code, if it had been entered there previously. (See the Buyer Manager section.)
LATEST DUE DATE to RELEASE	String	8	optional	Date beyond which a purchase order must not be due. This entry keeps purchase orders from being printed, and thereby released, too early.
INCLUDE PREVIOUSLY RELEASED ITEMS (YN)	String	1	optional; Y or N	Flag designating whether to include in the report any purchase orders previously released. If set to "N", only "active" PO's are printed.
PRINT PURCHASE ORDERS (YN)	String	1	required; Y or N	Flag designating whether to print PO's that are currently "active" (i.e., having a null status code). Entering "Y" prints these PO's and sets their status to "R". If set to "N", the system only prints labels.
NOTE 1 and NOTE 2	String	40	optional	A 40 character message to include in the report.

4.3.4.2.5.6 Purchase Order Status

The Purchase Order Status screen (Figure 4.3.4.48) lets operators browse all purchase order records, including those that have been closed or cancelled. No updates are allowed. The items bottom-line command is available and is the same as the Purchase Order Modification screen's (refer to Section 4.3.4.2.6.5.4), except it does not allow updates either.

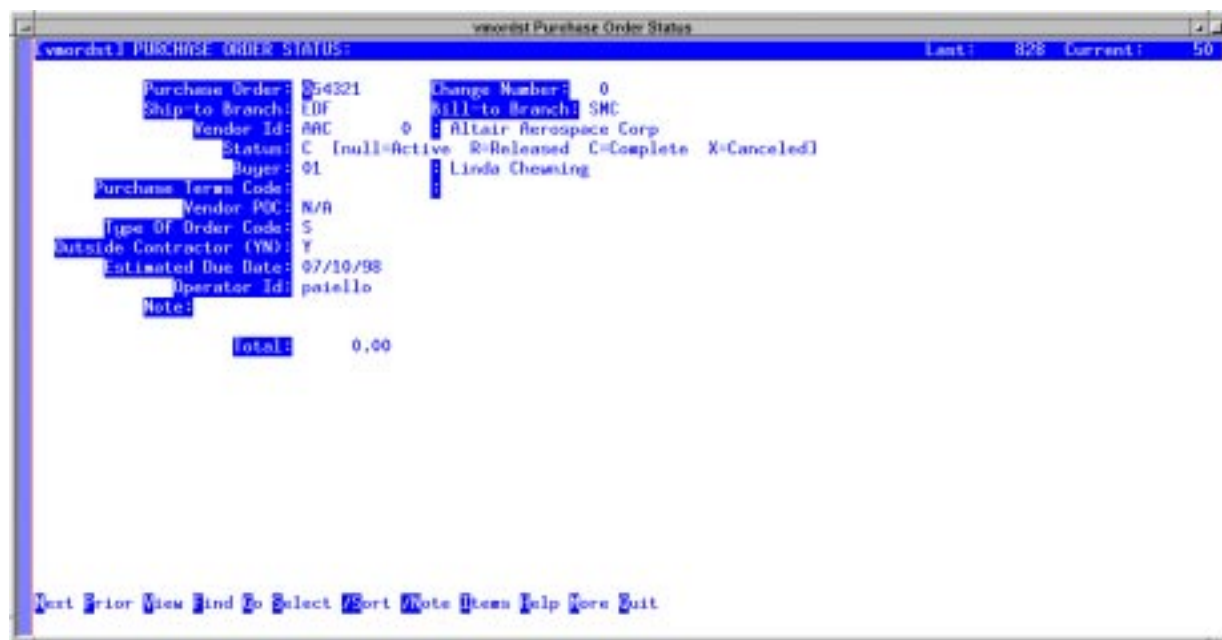


Figure 4.3.4-48. Purchase Order Status CHUI

Table 4.3.4-40 describes the fields on the Purchase Order Status screen.

Table 4.3.4-40. Purchase Order Status Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Purchase Order	String	10	system-supplied	Identifier for the purchase order.
Change Number	Numeric	3	system-supplied	Number identifying the revision level for the PO.
Ship-To Branch	String	6	system-supplied	Code for the site to which the material is to be shipped.
Bill-To Branch	String	6	system-supplied	Code for the site the vendor is to bill.
Vendor Id	String	6	system-supplied	Code for the vendor from whom items are being purchased.
Status	String	1	system-supplied	Code for the status of the purchase order. Null = Active; R = Released; C = Completed; X = Cancelled.
Buyer	String	6	system-supplied	Code for a person authorized to purchase the item.
Purchase Terms Code	String	2	system-supplied	Code for the terms under which the items are being purchased.

Table 4.3.4-40. Purchase Order Status Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Vendor Poc	String	30	system-supplied	Name of the person designated as the point of contact at the vendor facility.
Type Of Order Code	String	1	system-supplied	Code that distinguishes among purchase orders according to purpose. This field should always be left at the default of 'S'.
Outside Contractor (YN)	String	1	system-supplied	Flag indicating if the vendor is an outside contractor. This field should always be set to "Y".
Estimated Due Date	Date	2	system-supplied	Date the material being ordered is expected.
Operator Id	String	8	system-supplied	The login ID of the operator who added this item to the database.
Note	String	60	system-supplied	A 60 character note attached to the purchase order.
Total	Numeric	10	system-supplied	The system calculated value of the order.

4.3.4.2.5.7 Receipt Confirmation Screen

The Receipt Confirmation screen (Figure 4.3.4-49) handles receiving of materials obtained through purchase orders. It is the primary means of adding to the catalog of EINs in the system and adjusting inventory records to account for new items, including consumables and spares.

Received items are tied to receipts, a receipt being a list of items received against the same purchase order. Although multiple purchase orders cannot use the same receipt, a purchase order can use multiple receipts as long as at most one of the receipts is open at a time. That is, operators can accumulate items in an open receipt until all the purchase order's items have been received, or they can close a receipt as they wish and open new ones as needed for the order's remaining items. Closing all receipts each day permits tracking how many items were received each day.

When items arrive, create a new receipt, if necessary, always letting the system assign the next, sequential number for an identifier. Enter the purchase order number and other details. If a receipt is already open for that PO, the system will warn you to use it instead. It won't be hard to locate since the screen displays only "open" receipts. (Using table view or the Find command on the purchase order field should help.) Table 4.3.4-41 describes the Receipt Confirmation screens fields.

Use the Items command to add the new items to the receipt. The items page (Figure 4.3.4-50) will display all of the order's line items regardless of status and quantity due. Enter in this screen the actual quantities of each line item received and then exit. Upon exit, the system will ask to process the transaction and, if the response is yes, attempt to determine for each item received whether it is a consumable, or spare. Consumables are processed automatically, but an EIN Entry Manager screen is invoked for each spare and other EIN received so the items can be properly catalogued.

The system will also ask to close the receipt if it determines no more items are due against the purchase order. Table 4.3.4-42 describes the items page's fields.

Note: Consider listing the same part as different items on a receipt if the items were received at different locations.

The screenshot shows a 'Receipt Confirmation' window with the following fields and values:

- Receipt: 67
- Purchase Order: 000000001
- Vendor name: Ameridata Federal Sys
- STATUS: C [C=Complete X=Cancelled]
- Date Entered: 07/13/00
- Date Received: 07/12/00
- RECEIVED BY: kross
- PACKING LIST:

The menu bar at the bottom includes: Exit, Prior, New, Find, Go Select, Sort, Note, Items, Help, More, Exit.

Figure 4.3.4-49. Receipt Confirmation CHUI

Table 4.3.4-41 describes the fields on the Receipt Confirmation screen.

Table 4.3.4-41. Receipt Confirmation Field Descriptions

Field Name	Data Type	Size	Entry	Description
Receipt	Numeric	6	required	Number assigned to order during receipt process.
PurchaseOrder	String	10	optional	Identifier for the PO associated with this receipt.
Vendor name	String	35	optional	Name of the vendor fulfilling the PO.
STATUS	String	1	optional	Code for status of the receipt. Null = Open; C = Complete; X = Cancelled
Date Entered	Date	2	system-supplied	Date the receipt was created.
Date Received	Date	2	system supplied	Date the item was received.
RECEIVED BY	String	4	optional	Identifier for the operator entering this receipt.
PACKING LIST	String	20	optional	Tracking Identifier/ ID of the packing list included in the received shipment.

Receipt Confirmation

Receipt: 48 Purchase Order: EDF000029 Vendor name: Status: Last: 207 Current: 5

Date Entered: 07/28/98 Last: 1 Current: 1

Item Number: 1

Part or Description: TRAINING

Oem Description: Advanced System Administration

RECEIVING LOCATION: EDF

BUILDING: 1616 A

Quantity Due: 1.0

PACKING LIST QUANTITY: 0.0

URGENT QUANTITY RECEIVED: 0.0

Test Prior View Find Go Select Sort Note Check Execute Help More Quit

Figure 4.3.4-50. Items Page for Receipt Confirmation CHUI

Table 4.3.4-42 describes the fields on the Items Page for Receipt Confirmation screen.

Table 4.3.4-42. Items Page for Receipt Confirmation Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Item Number	Numeric	4	system-supplied	Sequence number for the item on the item page.
Part or Description	String	10	optional	Manufacturer's or vendor's part number for the item.
Oem Description	String	35	optional	Manufacturer's or vendor's description of the item.
RECEIVING LOCATION	String	1	optional; default is the destination from the purchase order line item's record	Code for the inventory location receiving the item.
BUILDING	Date	2	optional; default is the building from the purchase order line item's record	Identifier for the building where the item is to be delivered.

**Table 4.3.4-42. Items Page for Receipt Confirmation Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
Quantity Due	Floating	9.1	system-supplied	Quantity of the item still due: the sum of the original order quantity, plus the quantity authorized for return to the vendor, minus the quantity received to date.
PACKING LIST QUANTITY	Floating	9.1	optional	Quantity shown by the vendor on the packing list.
CURRENT QUANTITY RECEIVED	Floating	9.1	required	Quantity of the item received this transaction.

4.3.4.2.5.8 Print Receipt Reports Screen

The Print Receipt Reports screen (Figure 4.3.4-51) provides the ability to print past receipt reports. Enter record selection criteria and the number of copies required as indicated by Table 4.3.4-43, then invoke the Execute bottom-line command. Respond to the report processing prompts as appropriate.

Figure 4.3.4-51. Print Receipt Reports CHUI

Table 4.3.4-43 describes the fields on Print Receipt Reports screen.

Table 4.3.4-43. Print Receipt Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
RECEIPT NUMBER or RANGE	String	6	required	Receipt tracking number(s) to report. The operator may zoom to the Receipts table and choose the number, if it had been entered there previously. (See the Receipt Confirmation section.)
PURCHASE ORDER or RANGE	String	10	optional	Identifier or range of identifiers for one or more purchase orders. The operator may zoom to the Purchase Order table and choose the number, if it had been entered there previously. (See the Purchase Order Entry section.)
ITEM NUMBER or RANGE	String	8	optional	Item number(s) to report.
RECEIPT DATE or RANGE	Date	2	optional	Receipt date(s) to report.
NOTE 1 and NOTE 2	String	40	optional	A 40 character message to include in the report.
RECEIPT TICKETS	String	1	required	Number of copies of the report to print.

4.3.4.2.5.9 Purchase Order Processing Screen

Operators use the Purchase Order Processing screen (Figure 4.3.4-52) to close all open PO's that meet established criteria: namely, the percentage of completion of each item and the number of days without any activity in the order. Values for these parameters are preset in the System Parameters table to "0" and are not modifiable via data entry screen in the ILM configuration deployed. As is, running this program will automatically close all PO's not modified since the previous day.

Enter either "F", "B", or "A" in response the screen's prompt to run the program in the foreground, run it in the background, or reject running it at all, respectively.



Figure 4.3.4-52. Purchase Order Processing CHUI

4.3.4.2.5.10 Vendor Master Manager Screen

The Vendor Master Manager screen (Figure 4.3.4-53) permits the entry and modification of vendors and address data to the system. The operator enters or modifies the fields for this screen as required (see Table 4.3.4-44), then uses the screen's Addr command to invoke the address page (Figure 4.3.4-54) to update address data for the vendor (see Table 4.3.4-45).



Figure 4.3.4-53. Vendor Master Manager CHUI

Table 4.3.4-44 describes the fields on the Vendor Master Manager screen.

Table 4.3.4-44. Vendor Master Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
VENDOR ID	String	6	required	Code for a vendor from whom items are purchased.
NAME	String	30	optional	Full name of a vendor from whom items are purchased.
PAYMENT TERMS CODE	String	2	optional	Code for the default payment terms for invoices for the vendor. The operator may zoom to the Payment Terms table to choose the code, if it had been entered there previously. (See the Sales/Purchase Terms Maintenance section.)

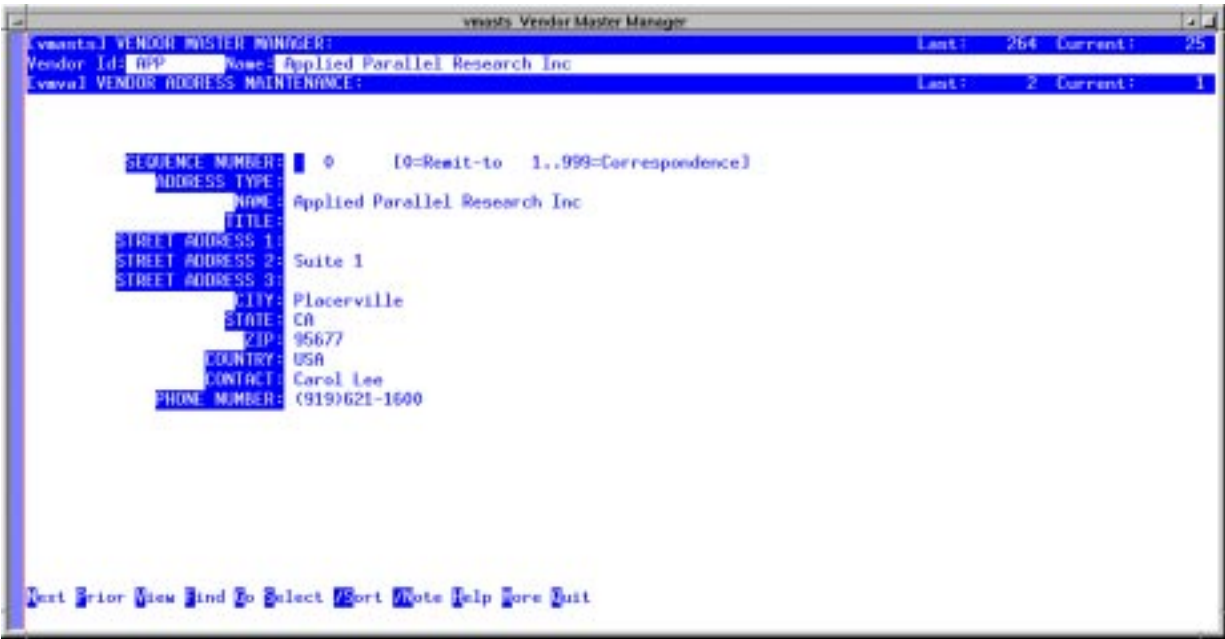


Figure 4.3.4-54. Address Page for Vendor Master Manager CHUI

Table 4.3.4-45 describes the fields on the Address Page for Vendor Master Manager screen.

**Table 4.3.4-45. Address Page for Vendor Master Manager
Field Descriptions**

Field Name	Data Type	Size	Entry	Description
SEQUENCE NUMBER	Numeric	3	required	Number that uniquely identifies each address for a company. The value "0" is interpreted as the default.
ADDRESS TYPE	String	2	optional	Code that distinguishes among purposes for which the address is used.
NAME	String	30	optional	Company name or individual's name that appears as the first line of the address.
TITLE	String	20	optional	Title of an individual at the company.
STREET ADDRESS 1, 2, 3	String	30	optional	Address for the vendor.
CITY	String	20	optional	City part of address.
STATE	String	2	optional	State 2 character abbreviation of address.
ZIP	String	10	optional	Zip code of address.
COUNTRY	String	16	optional	Country in which the vendor is located.
CONTACT	String	30	optional	Name of a contact at the address.
PHONE	String	18	optional	Telephone number of address.

4.3.4.2.6 Maintenance Menu

The ILM Maintenance Menu (Figure 4.3.4-55) helps operators navigate to data entry screens used to record and track maintenance oriented data, generate and track Work Orders for maintenance actions, and schedule preventative maintenance for appropriate items. These screens, which are discussed in the subsections below, include:

- Work Order Entry - for entering work orders for repairs.
- Work Order Modification (EDF) - for updating of work orders by central ILS managers as maintenance activity proceeds.
- Work Order Modification - for updating work orders by local maintenance coordinators as maintenance activity proceeds.
- Preventative Maintenance Items - for designating which items in the EIN file require preventative maintenance.
- Generate PM Orders - for generating work orders for items needing preventative maintenance.
- Work Order Parts Replacement History - for reporting items replaced under one or more work orders.
- Maintenance Work Order Reports - for reporting about maintenance activity on selected machines.
- Work Order Status Reports - for reporting the status of work orders.
- Maintenance Codes - for defining failure codes to be used when describing repairs and replacements.
- Maintenance Contracts - for managing information about maintenance contracts with vendors and suppliers.
- Authorized Employees - for identifying employees permitted access to vendors for repair notification.
- Work Order Line Item Query - for browsing line item records across multiple maintenance work orders.

Maintenance Work Orders (MWOs) are the heart of XRP-II's Maintenance Management functionality. They are used for collecting downtime information against equipment subject to Reliability, Maintainability, and Availability (RMA) reporting as well as to identify equipment that has failed and/or been replaced during system maintenance. By way of a special feature available to the Work Order Modification screen, operators can have the system update property records automatically based on the maintenance activities a work order describes.

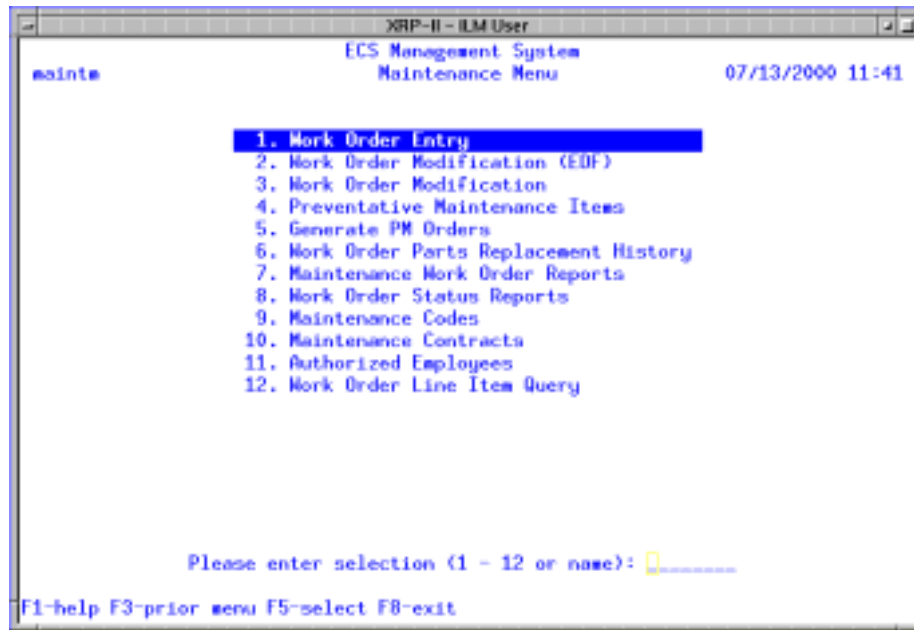


Figure 4.3.4-55. Maintenance Menu

4.3.4.2.6.1 Work Order Entry Screen

Operators use the Work Order Entry screen to create a maintenance work order (MWO) -- a work order for repairs. It consists of the header screen depicted in Figure 4.3.4-56 and a two-part items page. The header screen records key information about the system under maintenance, which is usually a parent item in an EIN structure for which failure and downtime data is being collected. The items page describes the maintenance actions performed on individual components that have failed, been replaced, or been added new.

The header screen is always presented in ADD mode to facilitate data entry. Table 4.3.4-46 describes this screen's fields. To create a maintenance work order, complete the required fields then exit ADD mode by pressing <F3>. Next, use the Items bottom-line command to add work order line items detailing the work performed on individual components. Line items can be added at the time the work order is created, or at some later time using the Work Order Modification screen. The items page is described in Section 4.3.4.2.6.2 since it is the same as the one attached to the Work Order Modification screen, where it is used most often. Press <F3> to exit the page and <F3> again to exit Work Order Entry.

Note: The Work Order Entry screen displays only those work orders created during the current session. After exiting Work Order Entry, newly created work orders can be viewed only by using the Work Order Modification screen. (See section 4.3.4.2.6.2 below.)

Note: When creating multiple MWOs, cursor down at the last field on the header screen instead of exiting ADD mode. XRP-II will re-position the cursor to the top of the screen and prepare to accept another record. Press <F3> to exit ADD mode when done.

Work Order Entry CHUI Screenshot Data:

Field	Value
WORK ORDER	00000001
PARENT EIN	00001642
Serial Number	551554
ECS NAME	g0drg01
DEM Part	R-97804-S2
DEM Desc	Challenge XL Rack Server
Mod/Ver	XL
Building	32
Location	GSFC
Room	N30
Notification Date	07/14/00
Priority	
Failure Date	07/14/00
MFR	SGI
Main Vendor	SGI
Vendor Call Date	07/14/00
Vendor Contact Name	Glenn Hagan
Vendor Reference	Case ID # 1142620
Notification Time	13:45
Submitter	
Failure Time	08:00
Vendor	SGI
Time	14:00
Text	IP25 failure. Replace CPU board.

Figure 4.3.4-56. Work Order Entry CHUI

Table 4.3.4-46 describes the fields on the Work Order Entry screen.

Table 4.3.4-46. Work Order Entry Field Descriptions (1 of 3)

Field Name	Data Type	Size	Entry	Description
WORK ORDER	String	10	required; < RETURN >	Identifier for the work order. The operator should always press RETURN. It causes the system to assign the next sequential number available based on the value for last work order number in file last.wo.x in the XRP database directory. The value typically has the first 3 characters of the site's code as a prefix.
PARENT EIN	String	20	optional	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
Serial Number	String	30	system-supplied	Serial number of the item entered as parent EIN.
ECS NAME	String	30	system-supplied, but modifiable	Name of the machine with which the item is associated.

Table 4.3.4-46. Work Order Entry Field Descriptions (2 of 3)

Field Name	Data Type	Size	Entry	Description
Suffix	String	3	system-supplied	Code which when used as a suffix to ECS Name forms an identifier (RMA ID) for equipment subject to RMA reporting.
OEM Part	String	34	system-supplied	Manufacturer's part number for the item entered as Parent EIN.
OEM Desc	String	30	system-supplied	Manufacturer's description for the item entered as Parent EIN.
Mod/Ver	String	24	system-supplied	Model or version of the item entered as Parent EIN.
Location	String	8	system-supplied	Designator for the inventory location of the item entered as Parent EIN.
Building	String	6	system-supplied	Building where the item entered as Parent EIN is situated.
Room	String	6	system-supplied	Room where the item entered as Parent EIN is situated.
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the work order.
NOTIFICATION DATE	Date	2	optional	Date notification of the failure was made.
NOTIFICATION TIME	Time	2	optional	Time notification of the failure was made.
PRIORITY	String	1	optional	Priority assigned to the work.
SUBMITTER	String	10	optional	Code of the employee who submitted the problem and caused the work order to be opened. The operator may zoom to the Employee table to choose the code, if it had been entered there previously. (See the Employee Manager section.)
FAILURE DATE	Date	2	optional	Date that the failure occurred.
FAILURE TIME	String	2	optional	Time that the failure occurred.
MFR	String	6	optional	Code for the manufacturer or developer of the item. The operator may zoom to the Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.)
VENDOR	String	6	optional	Code for the vendor from whom the item was procured. The operator may zoom to the Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.)

Table 4.3.4-46. Work Order Entry Field Descriptions (3 of 3)

Field Name	Data Type	Size	Entry	Description
MAINT VENDOR	String	6	optional	Code for the item's maintenance vendor. The operator may zoom to Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.)
VENDOR CALL DATE	Date	2	optional	Date the vendor was called and informed of the problem.
TIME	Time	2	optional	Time the vendor was called and informed of the problem.
VENDOR CONTACT NAME	String	30	optional	Name of the vendor point of contact.
VENDOR REFERENCE	String	20	optional	Identifier to be referenced when contacting the vendor about the problem with the item.
TEXT	String	n/a	optional	A block of free form text for describing maintenance-related activities.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A 60 character note that can be associated with this item.

4.3.4.2.6.2 Work Order Modification (EDF) Screen

The Work Order Modification (EDF) screen provides the ability to update maintenance work orders as maintenance activity proceeds and as additional information about the repair becomes known. It also has a special feature that updates property records on demand based on events and data described in a work order's line items.

Work Order Modification (EDF) consists of a two-part header screen for recording failure and downtime for the system under maintenance and a two-part items page for describing work performed on the system's components. It functions much the same as Work Order Entry (see Section 4.3.4.2.6.1) except it can accept more information, can be used to view all work orders pertinent to the site, and can process work order line items to update property records based on line item information. The following bottom-line command is unique to the header screen, and is discussed later in this section:

- **.Process_Changes** - updates EIN property records based on information in the line item records for the Maintenance Work Order.

When Work Order Modification (EDF) is invoked, XRP-II presents the header screen's left (main) page. The operator can enter or modify information in fields that allow it. Use of the Right command presents the header screen's right (chargeable hours) page on which cumulative downtime data can be recorded. Figures 4.3.4-57 and 4.3.4-58 depicts these pages, and Tables 4.3.4-47 and 4.3.4-48 describe their fields.

The header screen's Items command provides access to the items page for adding or accessing data about components involved in individual maintenance actions. In general, a line item would be created for each EIN-controlled component that has failed, been replaced, or been added new. Line items can be created even if an EIN record does not exist for the component, and operators can record observed details about a repair item even if the details conflict with what is currently contained in the EIN record for the item. Like the header screen, the items page has left and right pages (Figures 4.3.4-59 and 4.3.4-60).

Figure 4.3.4-57. Work Order Modification (EDF) Screen

Table 4.3.4-47 describes the fields on the Work Order Modification screen.

**Table 4.3.4-47. Work Order Modification (EDF) Field Descriptions
(1 of 3)**

Field Name	Data Type	Size	Entry	Description
Work Order	String	10	system-supplied	Identifier for the work order.
STATUS	String	1	optional; O, A, F, or R	Code for the status of the work order. O = Open; A = Audit; F=Finish; R = Retired.
Parent Ein	String	20	optional	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
Serial Number	String	30	system-supplied from EIN record	Serial number of the item entered as Parent EIN.

**Table 4.3.4-47. Work Order Modification (EDF) Field Descriptions
(2 of 3)**

Field Name	Data Type	Size	Entry	Description
Ecs Name	String	30	system-supplied from EIN record	Name of the machine with which the item is associated.
Suffix	String	3	system supplied	Code which when used as a suffix to ECS Name forms an identifier (RMA ID) for equipment subject to RMA reporting.
OEM Part	String	34	system-supplied from EIN record	Manufacturer's part number for the item entered as Parent EIN.
OEM Desc	String	30	system-supplied from EIN record	Manufacturer's description for the item entered as Parent EIN.
Mod/Ver	String	24	system-supplied	Model or version number of the item entered as Parent EIN.
Location	String	8	system-supplied from EIN record	Designator for the location where the item entered as Parent EIN is situated.
Building	String	6	system-supplied from EIN record	Building in which the item entered as Parent EIN is situated.
Room	String	6	system-supplied from EIN record	Room in which the item entered as Parent EIN is situated.
Control Item ID	String	30	system-supplied from EIN record	Baseline control item id for the item entered as Parent EIN.
TROUBLE TICKET	String	15	optional	Identifier for the trouble ticket associated with the work order.
NOTIFICATION DATE	Date	2	optional	The date problem was reported. This field is initialized with the current date but can be modified.
NOTIFICATION TIME	Time	2	optional	The time problem was reported. This field is initialized with the current time but can be modified.
ALDT REASON CODE	String	10	optional	Code for the maintenance action's administrative logistic delay time (ALDT) .
PRIORITY	String	1	optional	Code for the priority assigned to the work.
FAILURE DATE	Date	2	optional	Date that the failure occurred.
FAILURE TIME	Time	2	optional	Time that the failure occurred.
ALDT	Floating	9.1	optional	Duration, in hours, of any administrative logistic delays due the failure (i.e., delays, after repair has started, that prevent the "system" from returning to an available state).

**Table 4.3.4-47. Work Order Modification (EDF) Field Descriptions
(3 of 3)**

Field Name	Data Type	Size	Entry	Description
VENDOR CALL DATE	Date	2	optional	The date the maintenance vendor was called.
VENDOR CALL TIME	Time	2	optional	The time the maintenance vendor was called.
VENDOR ARRIVE DATE	Date	2	optional	The date the maintenance vendor actually arrived to perform the repairs.
VENDOR ARRIVE TIME	Time	2	optional	The time the vendor actually arrived to perform the repairs.
VENDOR COMPLETE DATE	Date	2	optional	Date the repair was completed.
VENDOR COMPLETE TIME	Time	2	optional	Time the repair was completed.
MFR/DEV	String	6	optional; default is value from EIN record	Code identifying the manufacturer or developer of the specified parent EIN. The operator may zoom to the appropriate data file and pick the desired code. NOTE: This data must be previously entered with screen Vendor Master Manager (vmasts).
MAINT VENDOR	String	6	optional; default is value from EIN record	Code identifying the maintenance vendor for the specified parent EIN. The operator may zoom to the Vendor data file and choose the appropriate code. NOTE: This information must be previously entered using screen Vendor Master Manager (vmasts).
VENDOR CONTACT NAME	String	30	optional	Vendor point of contact.
VENDOR REFERENCE	String	20	optional	Operator has option to enter any information in reference to the vendor.
Events	Text	N/A	optional	Free form field for describing maintenance-related activities.
Date Entered	Date	2	system supplied	Date the record was created.
CODE	String	2	optional	The administrator can set up codes for their specific needs if desired.
NOTE	String	60	optional	This field is used to enter a 60-character note attached to this item.
START DATE	Date	2	optional	The date a delay in repairing the system began.
START TIME	Time	2	optional	The time a delay in repairing the system began.
END DATE	Date	2	optional	The date a delay in repairing the system ended.
END TIME	Time	2	optional	The time a delay in repairing the system ended.
REASON	String	4	optional	A code for the reason a delay was encountered.



Figure 4.3.4-58. Chargeable Hours Page for Work Order Modification (EDF) CHUI

Table 4.3.4-48 describes the fields on the Chargeable Hours Page for Work Order Modification screen.

Table 4.3.4-48. Chargeable Hours Page for Work Order Modification (EDF) Field Descriptions

Field Name	Data Type	Size	Entry	Description
Work Order	String	10	system-supplied	Identifier for the work order.
ALDT	Floating	10.1	optional	Administrative logistic delay time (ALDT) Specified in hours.
TIME TO REPAIR	Floating	10.1	optional	Time required to effect the repair. Specified in hours.
SWITCHOVER TIME	Floating	10.1	optional	Time required for system switch-over. Specified in hours.
TOTAL CHARGEABLE DOWNTIME	Floating	10.1	optional	Time to be charged for downtime. Specified in hours.

Work Order Modification (EDF)

Work Order: 0000000000 Status: A Parent Ein: 00002343 Serial Number: 7091160
 Ecs Name: n0msu02 Suffix: Dem Part: A14-UCB1-95-128EB
 Dem Desc: Ultra Server 2 Model 1200 200 MHz Mod/ver: 1200
 Last: 41 Current: 2

Seq: 9
 COMPONENT EIN: 00000077
 --- Database Value --- --- Observed Value ---
 OEM PART: TL206
 OEM DESC: Tape Drive - 4 MM
 MFR: DEC
 MOD/VER:
 SERIAL NUMBER: CX41607181
 RECEIVE DATE: 04/28/94
 Install Date: 12/06/99
 Status: I
 LIFE NUM:

EVENT TYPE: F [F=Fail N=New R=Rplc] MAINT CODE: V [R=Relo S=Stock V=Vend]
 CHANGE DATE: 07/13/00
 Processed?: N
 Data Entered: 07/14/00
 EVENTS:
 Failed & Replaced Items Only

FAILURE CODE: FAIL
 NEW LOCN: EDFARC
 REPLACEMENT'S EIN:
 NEW PARENT EIN:

NEW ECS NAME: 1616A
 ADDM: 1100
 USER:

[For Stock/Vend only]
 [For Stock/Vend only]
 [For Relo only]

Next Prior View Find Go Select Sort Note Logn-bill Help Work Quit

Figure 4.3.4-59. Items Page (Left) for Work Order Modification (EDF) CHUI (1 of 2)

Table 4.3.4-59 describes the fields on the Items Page (Left) for Work Order Modification screen.

Table 4.3.4-49. Items Page (Left) for Work Order Modification (EDF) Field Descriptions (1 of 3)

Field Name	Data Type	Size	Entry	Description
SEQ	Numeric	4	required	Number used to distinguish among the line items of a Maintenance Work Order.
COMPONENT EIN	String	20	optional	Identifier for an EIN-controlled item that is a child (component) of a parent EIN and the target of the maintenance event. The operator may zoom to the EIN table to choose an identifier, if it had been entered there previously (see the EIN Entry section). If the field is left null or blank, the system will create an inventory number with a C-prefix for it automatically when the line item is processed.
OEM Part	String	34	system-supplied from EIN record	Manufacturer's or vendor's part number for the item. The operator may zoom to the OEM Parts table to choose a number, if it had been entered there previously (see the OEM Parts section).

**Table 4.3.4-49. Items Page (Left) for Work Order Modification (EDF)
Field Descriptions (2 of 3)**

Field Name	Data Type	Size	Entry	Description
OEM Desc	String	40	system-supplied from EIN record	Manufacturer's or vendor's description of the item. The operator may zoom to the OEM Parts table to choose a description, if it had been entered there previously (see the OEM Parts section).
MFR	String	6	optional	Code used for the manufacturer of the item. The operator may zoom to the Vendor table to choose a code, if it had been entered there previously (see the Vendor Master section).
MOD/VER	String	24	optional	Model or Version of the item.
SERIAL NUMBER	String	30	optional	Serial number of the item.
RECEIVE DATE	Date	2	optional; default is the date from the item's EIN record	Date the item was received.
Install Date	Date	2	optional	Date the item was installed.
Status	String	1	optional	Code that designates the status of the item. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived.
GFE NUM	String	8	optional	Gov't Furnished Equipment (GFE) number for the item.
EVENT TYPE	String	1	required	Code identifying a type of maintenance event (N=new item installed; F=failed item replaced; R=serviceable item replaced).
MAINT CODE	String	3	required	Code designating the item's disposition. Property records are updated differently depending on the value entered.
CHANGE DATE	Date	2	required	Effective date of the configuration change.
EVENTS				A block of free form text for describing maintenance-related activities. Press /Z ...
Processed?	String	1	system supplied	Flag signifying whether or not the line item has been processed by the Work Order's .P(rocess_Changes) bottom-line command. The command updates the Component EIN's property records.
Date Entered	Date	2	system supplied`	Date the line item was created.
FAILURE CODE	String	2	optional	Code designating the cause of failure. This code is only used with failed items (i.e., Event Type="F".) The operator may zoom to the Maintenance Codes table and choose the code, if it had been entered there previously. (See the Maintenance Codes section.)

Table 4.3.4-49. Items Page (Left) for Work Order Modification (EDF)
Field Descriptions (3 of 3)

Field Name	Data Type	Size	Entry	Description
NEW ECS NAME	String	30	optional	ECS name to be recorded in the item's property record. This code is only applicable to items that have failed or are being replaced.
NEW LOCN	String	6	optional	Code for the new inventory location to which the item is to be assigned. This field is used for items that have failed or are being replaced (i.e., Event Type="F" or Event Type="R") and are being returned to stock or to a maintenance vendor. The operator may zoom to the Inventory Locations table to choose a code, if it had been entered there previously (see the Inventory Locations section).
BLDG	String	6	optional	New building where the item is to be installed. This field is used for items that have failed or are being replaced (i.e., Event Type="F" or Event Type="R") and are being returned to stock or to a maintenance vendor. The operator may zoom to the Inventory Locations table to choose a code, if it had been entered there previously (see the Inventory Locations section).
ROOM	String	6	optional	Room where the item is to be installed. This field is used for items that have failed or are being replaced (i.e., Event Type="F" or Event Type="R") and are being returned to stock or to a maintenance vendor.
USER	String	10	optional	New user to which the item is to be assigned. This field is used for items that have failed or are being replaced (i.e., Event Type="F" or Event Type="R") and are being returned to stock or to a maintenance vendor.
REPLACEMENT'S EIN		—		Identifier of the new item being used as a replacement. This field is used only for items that have failed or that are being replaced (i.e., Event Type="F", or Event Type="R").
NEW PARENT EIN	String	30	required	EIN of the item to which the Component EIN is to be re-assigned. This field is applicable only to components that have failed or are being replaced (Event Type="F" or "R"), and are being relocated (Maint Code="R"). <i>The value must be supplied or the item will not get processed.</i> The operator may zoom to the EIN table to choose an identifier, if it had been entered there previously (see the EIN Entry section).

Work Order Modification (EDF)

Work Order: 000000000 Status: A Parent Ein: 00002343 Serial Number: 7091160
 Item Name: n0msw02 Suffix: Item Part: A14-UCB1-95-128EB
 Item Desc: Ultra Server 2 Model 1200 200 MHz Mod/ver: 1200
 Item Number: Last: 9 Current: 9

SEQ: 9

--- Database Value --- --- Observed Value ---

MAINT CONTRACT: PO: FF10000021
 MANF YEAR: 1993
 VENDOR: DEC
 MAINT EXP DATE: 12/31/97

0
 //**

CODE: NOTE:
 CODE: NOTE:

Next Prior View Find Go Select Sort Note Log Bill Help Quit

Figure 4.3.4-60. Items Page (Right) for Work Order Modification (EDF) CHUI (2 of 2)

Table 4.3.4-50 describes the fields on the Items Page (Right) for Work Order Modification screen.

Table 4.3.4-50. Items Page (Right) for Work Order Modification (EDF) Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
SEQ	Numeric	4	required	Number used to distinguish among the line items of a Maintenance Work Order.
MAINT CONTRACT	String	15	optional	Identifier for the maintenance contract as assigned by Purchasing or provided by the vendor. The operator may zoom to the Maintenance Contracts table and choose an identifier, if it had been entered there previously. (See the Maintenance Contracts screen.)
MANF YEAR	Numeric	4	optional	Date the item was manufactured.
PO NUMBER	String	10	optional	Identifier for the purchase order against which the item was received. The operator may zoom to the Purchase Order table and choose an identifier, if it had been entered there previously. (See the Purchase Order Entry section.)

**Table 4.3.4-50. Items Page (Right) for Work Order Modification (EDF)
Field Descriptions (2 of 2)**

Field Name	Data Type	Size	Entry	Description
VENDOR	String	6	optional	Code for the vendor from which the item was purchased. The operator may zoom to the Vendor data file and pick the desired code. NOTE: This data must be previously entered using screen Vendor Master Manager (vmasts).
WARRANTY DATE	Date	2	optional	Date the warranty period ends.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A 60 character note that can be associated with this item.

The Process_Changes command provides a convenient, reliable, and efficient means for updating ILM property records based on information contained in MWO line items. New EIN records are created as necessary, as are corresponding OEM part, engineering change, and EIN structure records. Processing adds new items to the ECS inventory, archives those that have failed or been returned to the vendor, and re-assigns any that have been relocated or returned to stock. Additionally, items returned to a vendor are rendered obsolete with respect to their parent EINs and, of those that had failed, costs are transferred to their replacements.

If XRP-II is to update property records based on MWO line item data, line item records must specify values for Event Type and Maint Code. They determine the type of property record changes to be made. (See Table 4.3.4.2-51) Additionally, operators must supply a value for New Parent EIN if an item is designated for relocation. Other line item fields, such as Component EIN, Change Date, Replacement's EIN, New Locn, and New Bldg, have special significance as well in that they influence which database records actually change.

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (1 of 8)**

Event Type	Maint Code	Property Record Updates
F (Failed)	R (Relocate)	<p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Clears its installation date • Sets status to "R" • Sets audit date to the Change Date • Sets ECS name to the name of the new parent EIN • Sets location, building, room, and user to that of the new parent EIN <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as New Parent EIN or, if none, as a component of the MWO's Parent EIN. The structure is rendered active as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> • Sets the count for the EIN at the losing inventory location to 0 • Sets the count for the EIN at the gaining inventory location to 1 <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "FAI" for the specified component

Table 4.3.4-51. Effects on Property Records by MWO Line Item Processing (2 of 8)

Event Type	Maint Code	Property Record Updates
F (Failed)	S (Stock)	<p>EIN records:</p> <ul style="list-style-type: none"> Creates a record if one doesn't exist for the specified component EIN For the specified component EIN: <ul style="list-style-type: none"> Clears its installation date Sets status to "F" Sets audit date to the Change Date Sets ECS name to New ECS Name value, if specified Sets location, building, room, and user to new values, if specified <p>OEM part records:</p> <ul style="list-style-type: none"> Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> Sets the count for the EIN at the losing inventory location to 0 Sets the count for the EIN at the gaining inventory location to 1 <p>Inventory transaction records:</p> <ul style="list-style-type: none"> Creates an entry for event of type "FAI" for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (3 of 8)**

Event Type	Maint Code	Property Record Updates
F (Failed)	V (Vendor)	<p>EIN records:</p> <ul style="list-style-type: none"> Creates a record if one doesn't exist for the specified component EIN For the specified component EIN: <ul style="list-style-type: none"> Clears its installation date Sets status to "X" Sets audit date to the Change Date Sets ECS name to New ECS Name value, if specified Sets location, building, room, and user to new values, if specified <p>OEM part records:</p> <ul style="list-style-type: none"> Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> Sets the count for the EIN to 0 at inventory locations having record of it <p>Inventory transaction records:</p> <ul style="list-style-type: none"> Creates an entry for event of type "FAI" for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (4 of 8)**

Event Type	Maint Code	Property Record Updates
N (New)	S (Stock)	<p>EIN records:</p> <ul style="list-style-type: none"> Creates a record if one doesn't exist for the specified component EIN For the specified component EIN: <ul style="list-style-type: none"> Sets installation date to the Change Date Sets status to "I" Sets audit date to the Change Date Sets ECS name to that of the Parent EIN specified for the MWO itself Sets location, building, room, and user values to that of the replaced item or, if none, to that of the Parent EIN specified for the MWO itself <p>OEM part records:</p> <ul style="list-style-type: none"> Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> Obsoletes the specified component EIN in parent EINs where it is active, if any. The structure is rendered inactive as of the specified Change Date Adds the EIN as a component of the item specified as New Parent EIN or, if none, as a component of the MWO's Parent EIN. The structure is rendered active as of the Change Date specified <p>Stock location records:</p> <ul style="list-style-type: none"> Sets the count for the EIN to 0 at inventory locations having record of it Sets the count for the EIN at the gaining inventory location to 1 <p>Inventory transaction records:</p> <ul style="list-style-type: none"> Creates an entry for event of type "MTR for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (5 of 8)**

Event Type	Maint Code	Property Record Updates
N (New)	V (Vendor)	<p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Sets installation date to the Change Date • Sets receive date to the Change Date • Sets status to "I" • Sets audit date to the Change Date • Sets ECS name to that of the Parent EIN specified for the MWO itself • Sets location, building, room, and user values to that of the replaced item or, if none, to that of the Parent EIN specified for the MWO itself • If the component is replacing an EIN specified in a separate line item as a failed item being returned to the vendor and , copies the item cost from the EIN record for the failed item to the EIN record for the new item • If another line item specifies this component as a replacement EIN • Sets item cost to that of a component being replaced if a line item exists for the replaced component and that line item designates that component as failed/returned to vendor and this component as the failed item's replacement • For a failed item being replaced by the specified component EIN: <ul style="list-style-type: none"> • Sets cost to 0 <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in parent EINs where it is active, if any. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as New Parent EIN or, if none, as a component of the MWO's Parent EIN. The structure is rendered active as of the Change Date specified <p>Stock location records:</p> <ul style="list-style-type: none"> • Sets the count for the EIN at the gaining inventory location to 1 <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "MRV" for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (6 of 8)**

Event Type	Maint Code	Property Record Updates
R (Replaced)	R (Relocate)	<p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Clears its installation date • Sets status to "R" • Sets audit date to the Change Date • Sets ECS name to the name of the new parent EIN • Sets location, building, room, and user to that of the new parent EIN <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date • Adds the EIN as a component of the item specified as New Parent EIN. The structure is rendered active as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> • Sets the count for the EIN at the losing inventory location to 0 • Sets the count for the EIN to 1 at the inventory location of the specified New Parent EIN <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "REP" for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (7 of 8)**

Event Type	Maint Code	Property Record Updates
R (Replaced)	S (Stock)	<p>EIN records:</p> <ul style="list-style-type: none"> • Creates a record if one doesn't exist for the specified component EIN • For the specified component EIN: <ul style="list-style-type: none"> • Clears its installation date • Sets status to "R" • Sets audit date to the Change Date • Sets ECS name to New ECS Name value, if specified • Sets location, building, room, and user to new values, if specified <p>OEM part records:</p> <ul style="list-style-type: none"> • Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> • Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> • Sets the count for the EIN at the losing inventory location to 0 • Sets the count for the EIN at the gaining inventory location to 1 <p>Inventory transaction records:</p> <ul style="list-style-type: none"> • Creates an entry for event of type "REP" for the specified component

**Table 4.3.4-51. Effects on Property Records by
MWO Line Item Processing (8 of 8)**

Event Type	Maint Code	Property Record Updates
R (Replaced)	V (Vendor)	<p>EIN records:</p> <ul style="list-style-type: none"> Creates a record if one doesn't exist for the specified component EIN For the specified component EIN: <ul style="list-style-type: none"> Clears its installation date Sets status to "X" Sets audit date to the Change Date Sets ECS name to New ECS Name value, if specified Sets location, building, room, and user to new values, if specified <p>OEM part records:</p> <ul style="list-style-type: none"> Creates an OEM Part record if "observed values" for OEM Part, MFR, and Mod/Ver are specified and the part record doesn't already exist <p>EIN structure records:</p> <ul style="list-style-type: none"> Obsoletes the specified component EIN in parent EINs where it is active. The structure is rendered inactive as of the specified Change Date <p>Stock location records:</p> <ul style="list-style-type: none"> Sets the count for the EIN to 0 at inventory locations having record of it <p>Inventory transaction records:</p> <ul style="list-style-type: none"> Creates an entry for event of type "REP" for the specified component

4.3.4.2.6.3 Work Order Modification Screen

This screen is identical to the Work Order Modification (EDF) screen, except it provides access only to a limited number of MWOs – namely, those for equipment at the local site, unless the local site happens to be the SMC. See section 4.3.4.2.6.2 above for details about this screen.

4.3.4.2.6.4 Preventative Maintenance Items Screen

The Preventative Maintenance Items screen (Figure 4.3.4-61) provides the ability to designate which items in the EIN file undergo preventative maintenance (PM) and to establish a maintenance timetable for each. The operator uses XRP-II's Select, Sort, and Find commands to obtain a list of items to be modified. The operator then enters a 'Y' in the set field and a frequency of maintenance in days. When a date of last maintenance is entered, XRP-II will calculate when maintenance is due next.

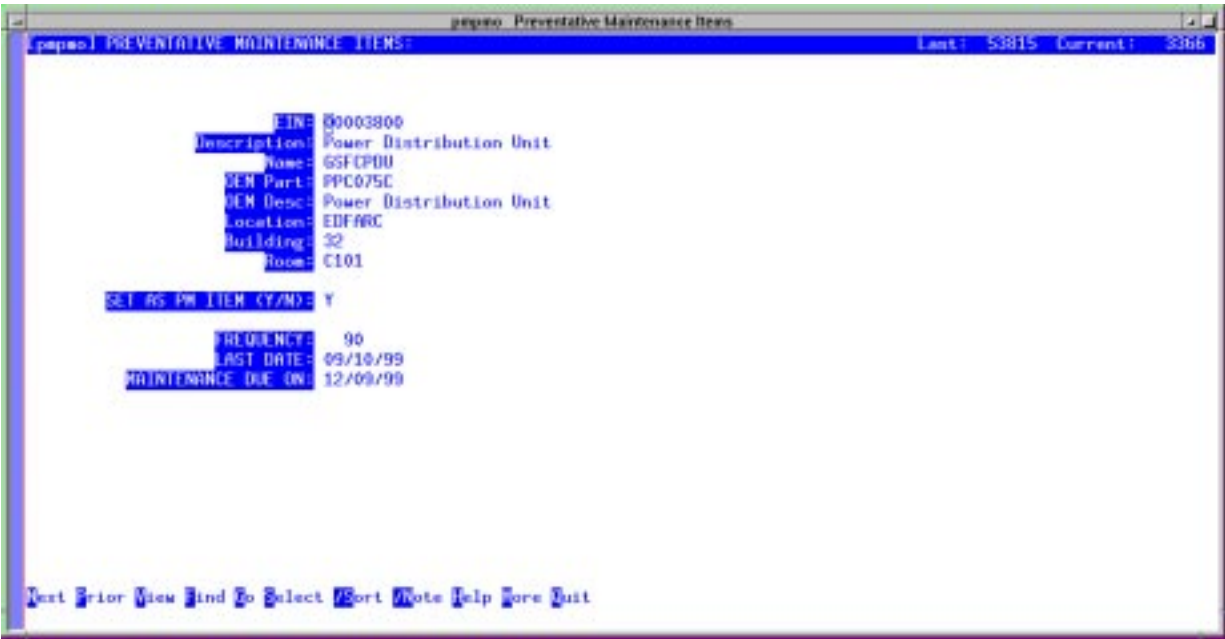


Figure 4.3.4-61. Preventative Maintenance Items CHUI

Table 4.3.4-52 describes the fields on the Preventative Maintenance screen.

**Table 4.3.4-52. Preventative Maintenance Items Field Descriptions
(1 of 2)**

Field Name	Data Type	Size	Entry	Description
EIN	String	20	required	Identifier for an EIN-controlled inventory item.
Description	String		system-supplied	Manufacturer's description of the item.
Name	String	30	system-supplied	Name of the machine with which the item is associated.
OEM Part	String	34	system-supplied	Manufacturer's part number for the item entered as EIN.
OEM Desc	String	30	system-supplied	Manufacturer's description for the item entered as EIN.
Location	String	8	system-supplied	Code for the inventory location where the item can be found.
Building	String	6	system-supplied	Identifier for the building where the item can be found.
Room	String	6	system-supplied	Room where the item can be found.

**Table 4.3.4-52. Preventative Maintenance Items Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
SET AS PM ITEM (Y/N)	String	1	optional; Y or N	Flag designating the item is to undergo preventative maintenance. Y = Yes; N = No.
FREQUENCY	Numeric	3	optional	Number of days between PM's.
LAST DATE	Date	2	optional	Date PM was performed for this item.
MAINTENANCE DUE ON	String	8	optional	Date the next PM is due for this item.

4.3.4.2.6.5 Generate PM Orders Screen

This screen, depicted in Figure 4.3.4-62, generates work orders for items needing preventative maintenance. When executed, XRP-II creates orders for all items needing PM prior to the operator-specified cutoff date. It also prints a summary report of orders created.

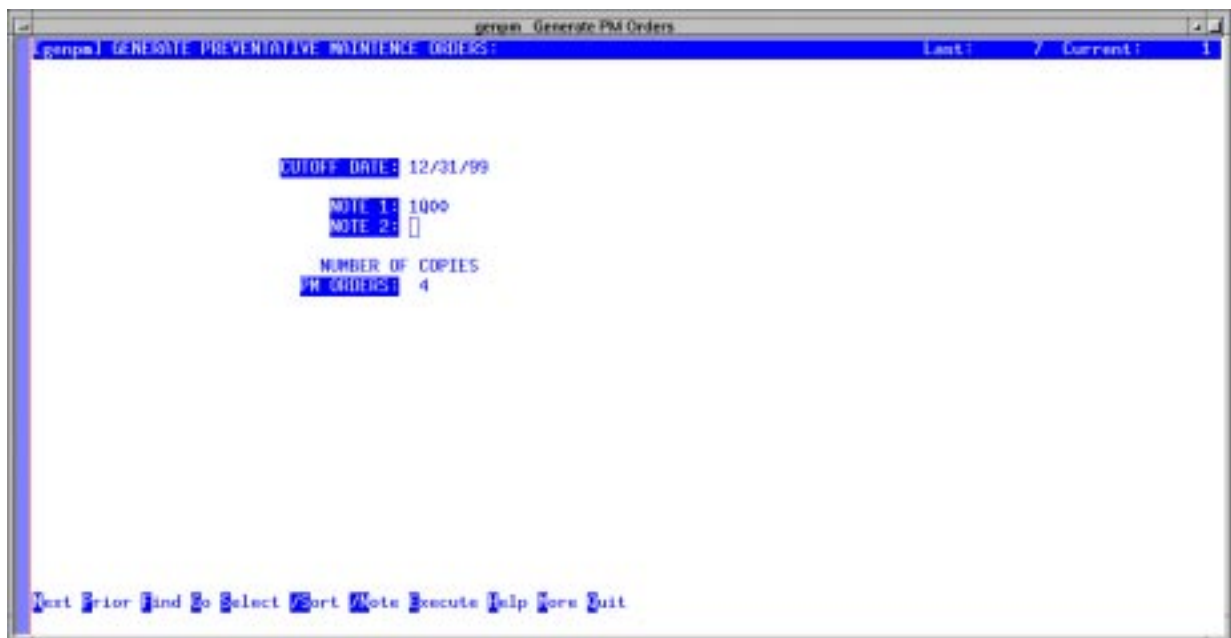


Figure 4.3.4-62. Generate PM Orders CHUI

Table 4.3.4-53 describes the fields on the Generate PM Orders screen.

Table 4.3.4-53. Generate PM Orders Field Descriptions

Field Name	Data Type	Size	Entry	Description
CUTOFF DATE	String	8	required	Enter the last date for the system to examine PM items and generate orders.
NOTE 1 and NOTE 2	String	40	optional	A 40-character note to include in the report.
NUMBER OF COPIES	String	1	optional	Number of copies of the report to generate.

4.3.4.2.6.6 Work Order Parts Replacement History Screen

The Work Order Parts Replacement History screen (Figure 4.3.4-63) generates reports detailing parts replaced under maintenance work orders. The operator enters a Work Order number or range of numbers and a number of copies wanted, then uses the Execute command to print the history reports.



Figure 4.3.4-63. Work Order Parts Replacement History CHUI

Table 4.3.4-54 describes the fields on the Work Order Parts Replacement History screen.

**Table 4.3.4-54. Work Order Parts Replacement History
Field Descriptions**

Field Name	Data Type	Size	Entry	Description
WORK ORDER or RANGE	String	25	required	Identifier for a work order or range of orders.
NOTE 1 and NOTE 2	String	60	optional	A 40-character note to include in the report.
NUMBER OF COPIES (WORK ORDER HISTORY REPORT)	String	1	required	Number of copies of the report to print.

4.3.4.2.6.7 Maintenance Work Order Reports Screen

Operators use the Maintenance Work Order Reports screen (Figure 4.3.4-64) to generate reports about maintenance work done on selected machines. The operator enters record selection criteria and the number of copies wanted, then uses the Execute command to print the reports.

Note: At least one record selection criteria field must contain an entry. Otherwise, no records will be included in the report.

Figure 4.3.4-64. Maintenance Work Order Reports CHUI

Talbe 4.3.4-55 describes the fieldson the Maintenance Wrok Order Reports screen.

Table 4.3.4-55. Maintenance Work Order Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
PARENT EIN	String	20	optional	EIN for the parent item in an EIN structure. The operator may zoom to the EIN table and choose the EIN, if it had been entered there previously. (See the EIN Entry section.)
OEM PART	String	34	optional	Manufacturer's part number for an item. The operator may zoom to the OEM Part file to choose the part number, if it had been entered there previously. (See the OEM Part Numbers section.)
SERIAL NUMBER	String	30	optional	Serial number of an item. The operator may zoom to the EIN file to choose a serial number, if it had been entered there previously. (See the EIN Entry section.)
SITE	String	6	optional	Code for a site at which items can be found.
NOTE 1	String	40	optional	A 40 character message to include in the report.
Maintenance Work Order Reports	Numeric	1	required	Number of copies of the report to print.

4.3.4.2.6.8 Work Order Status Reports

The Work Order Status Reports screen (Figure 4.3.4-65) provides status reports covering selected work orders. The operator enters record selection criteria and the number of copies wanted, then uses the Execute command to print the reports.



Figure 4.3.4-65. Work Order Status Reports CHUI

Table 4.3.4-56 describes the fields on the Work Order Status Reports screen.

Table 4.3.4-56. Work Order Status Reports Field Descriptions

Field Name	Data Type	Size	Entry	Description
WORK ORDER or RANGE	String	25	optional	Identifier for a work order or a range of orders. The operator may zoom to the Work Order file to choose an identifier, if it had been entered there previously. (See the Work Order Entry section.)
PART or RANGE	String	34	optional	Manufacturer's part number or a range of numbers for items. The operator may zoom to the OEM Part file to choose the part number, if it had been entered there previously. (See the OEM Part Numbers section.)
ORDER STATUS [OAFR]	String	2	optional	Code for the status of a work order.
NOTE 1, NOTE 2	String	40	optional	A 40 character message to include in the report.
WORK ORDER STATUS	Numeric	1	required	Number of copies of the report to print.

4.3.4.2.6.9 Maintenance Codes Screen

The Maintenance Codes screen (Figure 4.3.4-66) provides the ability to define the failure codes that may be used with descriptions of repairs and replacements. Values entered here are referenced by the items pages of the Maintenance Work Order Entry and Maintenance Work Order Modification screens discussed in Sections 4.3.4.2.6.1 and 4.3.4.2.6.2, respectively.



Figure 4.3.4-66. Maintenance Codes CHUI

Table 4.3.4-57 describes the fields on the Maintenance Codes screen.

Table 4.3.4-57. Maintenance Codes Field Descriptions

Field Name	Data Type	Size	Entry	Description
CODE	String	2	required	Code that distinguishes among item failures according to their cause.
DESC	String	30	optional	Description for the failure code.

4.3.4.2.6.10 Maintenance Contracts Screen

The Maintenance Contracts screen (Figure 4.3.4-67) provides the ability to track information about maintenance contracts in place with vendors and suppliers. The contract number is the key field and should be the actual number that Purchasing or the vendor assigns. The data entered here supports data entry for the EIN Entry and EIN Manager screens (Sections 4.3.4.2.1.1 and 4.3.4.2.1.2) as well as the Items pages of the Work Order Entry and Work Order Modification screens (Sections 4.3.4.2.6.1 and 4.3.4.2.6.2).



Figure 4.3.4-67. Maintenance Contracts CHUI

Table 4.3.4-58 describes the fields on the Maintenance Contracts screen.

Table 4.3.4-58. Maintenance Contracts Field Descriptions

Field Name	Data Type	Size	Entry	Description
CONTRACT ID	String	15	required	Identifier for the maintenance contract as assigned by Purchasing or provided by the vendor.
VENDOR	String	6	required	Code for the vendor with whom the contract is placed. The operator may zoom to the Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.
START DATE	Date	2	optional	Date the contract is to become effective.
END DATE	Date	2	optional	Date the contract will expire.
PO NUMBER	String	10	optional	Identifier for the Purchase Order under which maintenance was procured.
PIN	String	20	optional	PIN number applicable for authorization for vendor contact.
COMMENT	String	60	optional	Miscellaneous information specific to the contract.

4.3.4.2.6.11 Authorized Employees Screen

The Authorized Employees screen (Figure 4.3.4-68) provides the ability to enter and maintain the employee codes for persons permitted to contact vendors about needed repairs. Operators create a record for each employee authorized for each contract with each vendor. This permits assigning the employee to some (but not all) the maintenance contracts with a particular vendor and to some (but not all) vendors on a particular maintenance contract. Records identifying the employees must have been entered in the Employee table first (see Section 4.3.4.2.7.1).

EMPL	CONTRACT NO	VENDOR	Last Name
266	SILPGM	SUN	Roach
266	SYBASE	SYB	Roach
266	SYBASE		Roach
370	SYBASE	SYB	Gallagher
370	TEST1	SUN	Gallagher
370	Test1	SUN	Gallagher
407	457001	AAC	Kennedy
407	SILPGM		Kennedy
407	SYBASE		Kennedy

Figure 4.3.4-68. Authorized Employees CHUI

Table 4.3.4-59 describes the fields on the Authorized Employees screen.

Table 4.3.4-59. Authorized Employees Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
EMPL	String	10	required	Identifier for an employee. The operator may zoom to the Employee table and choose the code, if it had been entered there previously. (See the Employee Manager section.)
CONTRACT NO	String	10	required	Identifier for a maintenance contract. The operator may zoom to the Maintenance Contracts table and choose the identifier, if it had been entered there previously. (See the Maintenance Contracts Manager section.)

Table 4.3.4-59. Authorized Employees Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
VENDOR	String	6	required	Code for the vendor with whom the contract is placed. The operator may zoom to the Vendor table and choose the code, if it had been entered there previously. (See the Vendor Master Manager section.
Last Name	String	30	system-supplied	Last name of the employee. The value is obtained from the Employee table.

4.3.4.2.6.12 Work Order Line Item Query Screen

The Work Order Line Item Query screen provides the ability to browse line items for all Maintenance Work Orders. Operators can use this screen's Find and Select bottom-line commands to identify all work orders under which maintenance actions have been performed for specific component EINs. The screen has left and right pages (Figures 4.3.4-69 and 4.3.4-70) that are nearly identical to the items pages for Work Order Modification (EDF). Refer to Tables 4.3.4-49 and 4.3.4-50 above for the descriptions of these fields, except for field Work Order which was described in Table 4.3.4-47.

Work Order Line Item Query

Work Order: 000000038
Seq: 9
Component Ein: 00000077
--- Database Value ---
New Part: TL206
New Desc: Tape Drive - 4 MM
Mfr/dev: DEC
Mod/Ver:
Serial Number: CX41607181
Rec Date: 04/26/94
Install Date: 12/06/99
Status: I
Life Num:
--- Observed Value ---
mm/mm/mm
RIGHT for more details ->

Event Type: F [F=Fail N=New R=Rplc] Maint Code: V [R=Relo S=Stock V=Vend]
Change Date: 07/13/00
Processed?: N
Failure Code: FAIL
New Locn: EDFARC
Replacement Ein:
New Parent Ein:
Failed & Replaced
New Ecn Name:
Room: 1100
User:
[For Stock/Vend only]
[For Stock/Vend only]
[For Relo only]

Text Prior View Find Go Select Sort Note Help More Quit

Figure 4.3.4-69. Work Order Line Item Query (Left page) CHUI



Figure 4.3.4-70. Work Order Line Item Query (Right Page) CHUI

4.3.4.2.7 License Menu

Many software products used in ECS are licensed; that is, subject to conditions of limiting how many users can run the product and where. Licenses take numerous forms. Nodelock licenses let users run the product, but only on a designated machine; counted nodelock licenses limit the number of users that can run the product on that machine. Floating licenses allow users to run a product on any machine in a network. They may limit the number of users that can run the product concurrently, the number of servers that can be used concurrently, the number of sites that can use the product, or any combination of the above. Licenses can apply to a named product, one or more of its features, one or more of its versions, and/or one or more types of platforms. Some vendors enforce these provisions through use of license keys, but ECS is accountable for adhering to licensing provisions whether vendors use keys or not.

The life cycle for licensed COTS software encompasses developmental and systems engineering, purchasing, receiving, stocking, distribution, installation, use, and recovery. Licenses associated with COTS products are obtained, allocated, and archived; they also expire. Allocations can be re-assigned and recovered. Licenses do not always change when the licensed product does.

When purchasing a product or obtaining an upgrade, engineering determines what licensing provisions are required. Depending on the product, license entitlements may appear as separate line items on purchase orders, but often not. (For example, purchased licensing provisions may be provided with the product; that is, not purchased separately.) License certificates (rights to certify) typically accompany software when it arrives and, in the case of operating system software, accompanies the computers themselves. These certificates describe the licensing provisions that

were purchased and may carry an associated cost. Sometimes, the certificates include a license key, but usually they represent the right to obtain keys.

Multiple licenses are sometimes obtained from the product vendor under the provisions of a single license certificate. Each license would account for part of the rights-to-use under the certificate. Conversely, individual licenses can consume rights-to-use from more than one certificate. Each unique license key implies a unique license, but not every license has a key.

Licenses are allocated to the sites and host machines where their keys are installed, and keyless licenses are allocated to where their software products are installed. This is not so much for property accounting (i.e., cost accounting), but to verify adherence to purchased licensing provisions and to identify where licenses are used in case rights-to-use must be transferred elsewhere. A single license can be allocated to multiple sites and machines, although it's unclear at present whether a machine's current location determines the license's allocation site.

ECS Property Administrators receive purchased items and must account for them against expenditures. Items they receive include software products and license certificates, even if the certificate comes bundled with the software. They assign each an inventory number, then pass software items to the custodian of the ECS COTS Software Library and license certificates to the ECS Software License Administrator.

The ECS Software License Administrator (SLA) is responsible for tracking ECS software licenses, processing requests for renewal or re-allocation of license keys, researching license-related issues, and reporting on software license status. Purchasing handles requests that require changing ECS' licensing entitlements for a product, but the SLA contacts vendors directly via phone, e-mail, and fax to request licenses covered by existing license certificates. Licenses are received by mail, e-mail, and fax and might not be routed via property administrators if no costs are involved.

License rights-to-use are counted differently depending on the type of licenses purchased. Rights for nodelock license are allocated and counted by node and are consumed at the rate of one license per node. Floating license rights are allocated and counted based on number of users on a network rather than by specific machines, where the network is represented by a machine on which the license is installed. Floating license rights are consumed at the rate of number of users per license. Occasionally, a purchased entitlement covers a total number of users across a limited number of machines. In this case, rights are consumed at the rate of one license per node as well as number of users per license.

The License Menu (Figure 4.3.4-71) provides access to XRP-II's capability for managing software licenses. The six data entry screen selections generally available are:

- License Entitlement Manager (EDF) - for management of purchased license entitlements by central Software License Administrators;

- License Entitlement Manager - for browsing license entitlements at the DAACs. Essentially the same as the screen above but with fewer privileges.

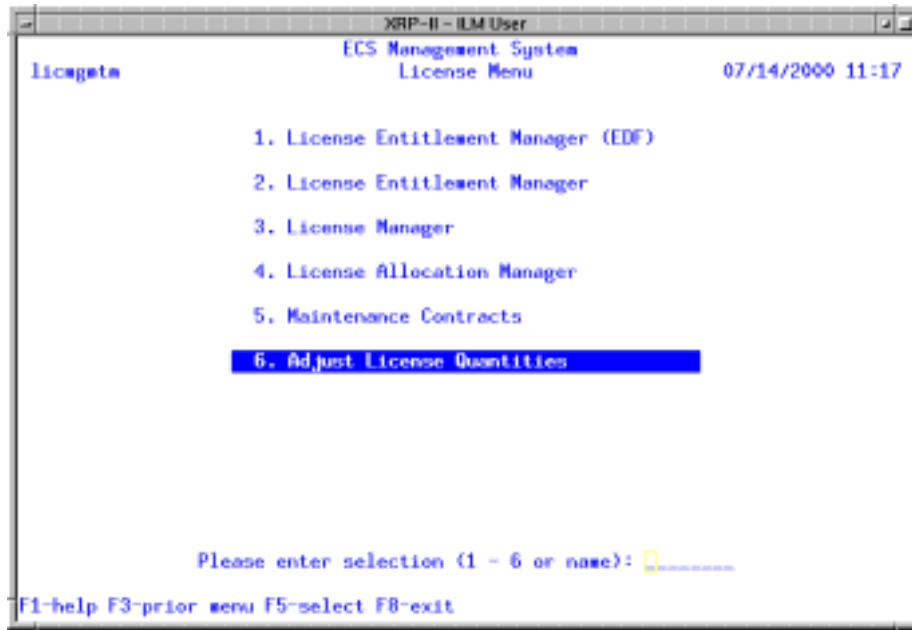


Figure 4.3.4-71. License Menu

License Manager – for tracking software license keys and keyless licenses obtained from vendors;

License Allocation Manager - for tracking license rights-to-use allocated to hosts and sites;

Maintenance Contracts - for managing information about maintenance contracts with vendors and suppliers;

Adjust License Quantities - for re-calculating rights-to-use remaining in products' license entitlement records.

The Maintenance Contracts screen was already described in Section 4.3.4.2.6.9 and is not repeated here.

4.3.4.2.7.1 License Entitlement Manager (EDF) Screen

Operators use the License Entitlement Manager (EDF) screen (Figure 4.3.4-72) to maintain records of purchased rights-to-use for licensed software, including how many node and user rights-to-use have been consumed, remain, and are under maintenance. An entitlement record usually corresponds to a line item on a purchase order much like an EIN for hardware, but it can also represent rights associated with one or more copies of a software product for which licenses are not purchased separately. A single record can accommodate a mix of both node and user rights-to-use. Rights consumed and remaining are computed automatically (and on demand) based on the licenses mapped against it.

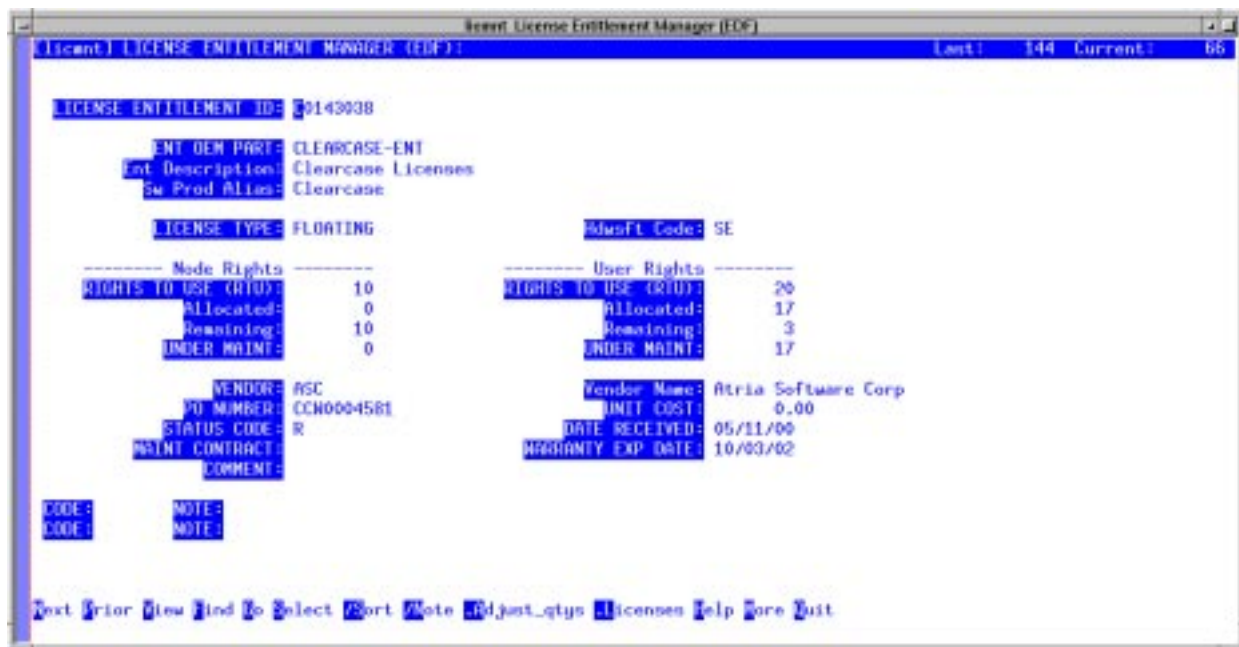


Figure 4.3.4-72. License Entitlement Manager (EDF) CHUI

The following bottom-line commands are unique to this screen:

- **.Adjust_qtys** - updates how many of the license entitlement's node and user rights-to-use are currently allocated and how many remain. This function is useful because quantities are adjusted automatically only when license allocation data is changed via the data entry screens.
- **.Licenses** - activates an items page that lists all the licenses associated with the entitlement.

Enter or modify information in fields that allow it (see Table 4.3.4-60). Use the **.A** bottom-line command to ensure calculations of rights consumed and remaining are current for the entitlement displayed. Use the **.L** command to review and/or change licenses' rights-to-use having leins against it.

**Table 4.3.4-60. License Entitlement Manager (EDF) Field Descriptions
(1 of 2)**

Field Name	Data Type	Size	Entry	Description
LICENSE ENTITLEMENT ID	String	20	required	Identifier for a purchased license entitlement. The equivalent of an EIN number.
ENT OEM PART	String	34	optional	Manufacturer's or vendor's part number for the entitlement. The operator may zoom to the OEM Parts table and choose the number, if it had been entered there previously. (See the section on OEM Part Numbers.)
Ent Description	String	40	system supplied	Manufacturer's or vendor's description for the entitlement. This field reflects the description of the OEM Part Number entered in the field above.
Sw Prod Alias	String	40	optional	Common name used in ECS for the licensed product and all its versions and variants.
LICENSE TYPE	String	16	optional	Classification that distinguishes among licenses according to rules of use. Examples include: floating (limited number of concurrent users), nodelocked (limited to use on a single machine), user (limited to use by a certain individual), project (unlimited use anywhere by individuals working on a certain project), site (unlimited use at a single site), etc.
Hdwsft Code	String	10	system supplied	Code for classifying inventory items by type. For license entitlements, the code defaults to the value stored in field License HWSW Code on the System Parameters Manager screen (see section 4.3.4.2.8.3).
Rights to Use (RTU)	Numeric	8	optional	Quantity of node or user rights-to-use authorized by this purchased entitlement.
Allocated	Numeric	8	system supplied	Quantity of node or user rights under the license entitlement currently allocated by licenses mapped to the entitlement. This value is calculated by the system and reflects the total number of active allocations of those licenses.
Remaining	Numeric	8	system supplied	Quantity of node or user rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
UNDER MAINT	Numeric	8	system supplied	Quantity of node or user rights-to-use currently under maintenance.
VENDOR	String	6	optional	Code for the vendor from whom the item was purchased.
Vendor Name	String	30	system supplied	Name of the vendor from whom the item was purchased.

**Table 4.3.4-60. License Entitlement Manager (EDF) Field Descriptions
(2 of 2)**

Field Name	Data Type	Size	Entry	Description
PO NUMBER	String	10	optional	Identifier of the purchase order against which the item was received.
UNIT COST	Numeric	10	optional	Price of the entitlement.
STATUS CODE	String	1	optional	Code that designates the status of the software product. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived;
DATE RECEIVED	String	8	optional	Date item was received from vendor.
MAINT CONTRACT	String	15	optional	Identifier for the Maintenance Contract under which the item is covered. The operator may zoom to the Contract data file and choose the desired contract number if it had been entered there previously. (See the Maintenance Contracts section.) .
WARRANTY EXP DATE	Date	2	optional	Date the warranty on the entitlement ends. This field defaults to 365 days from the date of entry.
CODE	String	2	optional	Identifier for a type or category of note associated with the item
NOTE	String	60	optional	A message that can be associated with the item.

The **.L** command invokes the Entitlement-Licenses items page depicted in Figure 4.3.4-73. This screen and its cousin, the Licenses-Entitlement items page attached to the License Manager screen, serve the same purpose: to map licenses obtained from vendors to the entitlements whose rights-to-use they consume. Multiple licenses may be mapped to a single entitlement, and a single license may be mapped to multiple entitlements. The Node RTU Allocated and User RTU Allocated fields specify how many of each type of rights a license draws from the entitlement and are what is used by the system when calculating an entitlement's rights consumed. The screen ensures that:

- a) the rights-to-use attributed to the entitlement do not exceed the entitlement's rights remaining;
- b) the sum of the rights being attributed for a license across multiple entitlements do not exceed the rights-to-use for the license.

Use the Add command to map a license to the entitlement currently active on the License Entitlement Manager screen, or use the Modify command to change the RTUs allocated to the license from the entitlement.

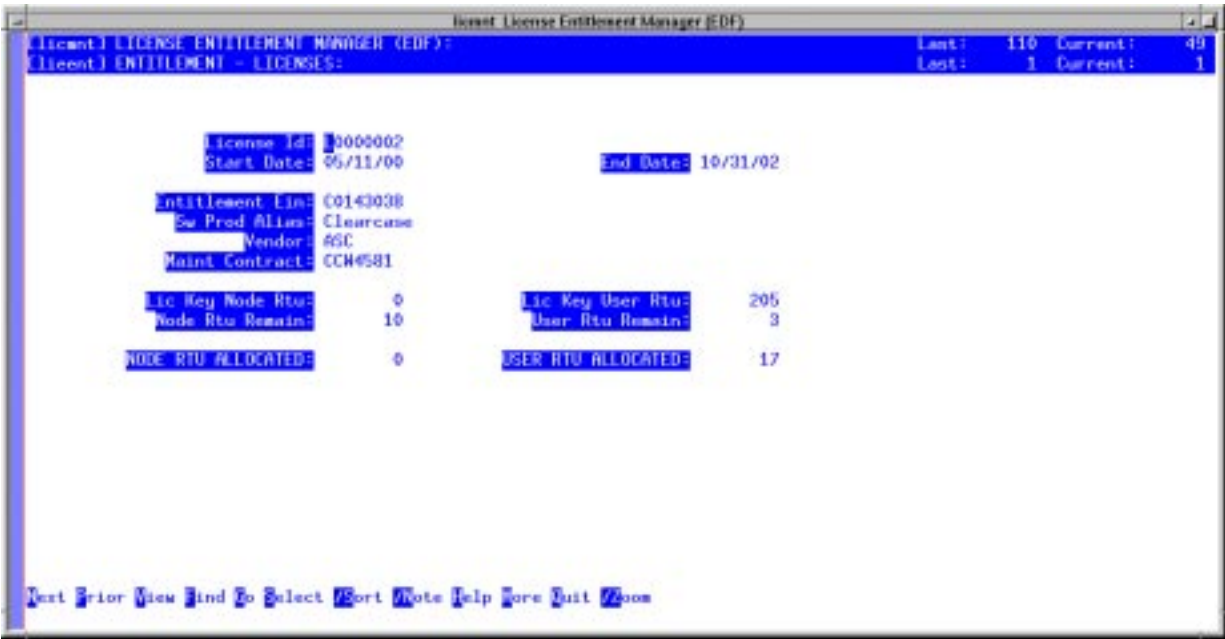


Figure 4.3.4-73. Entitlement – Licenses Page CHUI

Table 4.3.4-61 describes the fields on the Entitlement-Licenses Page.

Table 4.3.4-61. Entitlement – Licenses Page Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
License Id	String	20	required	Unique designator for a license.
Start Date	Date	2	optional	Date on which the license record takes effect.
End Date	Date	2	optional	Date on which the license record is rendered ineffective.
Entitlement Ein	String	20	required	Identifier for a purchased license entitlement. The equivalent of an EIN number.
Sw Prod Alias	String	40	system supplied	Common name used in ECS for the licensed product and all its versions and variants.
Vendor	String	6	system supplied	Code for the Vendor from whom the license entitlement was purchased.
Maint Contract	String	15	system supplied	Identifier for the Maintenance Contract under which the license entitlement is covered.
Lic Key Node Rtu	Numeric	8	system supplied	Number of machines on which the licensed product may be run concurrently sharing the same license key, if any. This value limits how many host allocation records can be created for the license.

Table 4.3.4-61. Entitlement – Licenses Page Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Lic Key User Rtu	Numeric	8	system supplied	Number of users authorized by the license to run the licensed product concurrently on a single network. This value limits the user rights-to-use that can be recorded in the license's allocation records.
Node Rtu Remain	Numeric	8	system supplied	Quantity of node rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
User Rtu Remain	Numeric	8	system supplied	Quantity of user rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
NODE RTU ALLOCATED	Numeric	8	optional	Number of node rights-to-use to be counted under the entitlement as having been consumed by the license. The value may not exceed the current value plus the node rights remaining under the entitlement.
USER RTU ALLOCATED	Numeric	8	optional	Number of user rights-to-use to be counted under the entitlement as having been consumed by the license. The value may not exceed the current value plus the user rights remaining under the entitlement.

4.3.4.2.7.2 License Entitlement Manager Screen

The License Entitlement Manager screen is for use at the DAACs. It currently looks and behaves the same as the License Entitlement Manager (EDF) screen, except cost data is not displayed. Refer to Section 4.3.4.7.1 for the description of this screen.

4.3.4.2.7.3 License Manager Screen

The License Manager screen (Figure 4.3.4-74) maintains records of software licenses obtained from vendors. Licenses can be mapped to purchased license entitlements so that consumption of license rights can be tracked. A license may be also be mapped to individual sites and hosts in order to track allocations, but only after it has first been mapped to one or more entitlements. This helps preclude allocating rights that exceed entitlements purchased.

A license is a euphamism for the rights granted a number of user to operate a software product or one or more of the product's versions or features concurrently on certain machines. These rights are often encoded in a license "key", but not all products employ such keys. Consequently, the License Manager screen uses a License ID to uniquely identify each license.

Licenses typically have an effectivitiy period; that is a range of dates within which they are being used. The effectivity period for a license is reflected by its start and stop dates. While these dates often correspond to the dates the license gets issued and expires, they more correctly equate to the dates the license is actually in use since they affect computations of remaining rights-to-use for entitlements.



Figure 4.3.4-74. License Manager CHUI

Note: Records displayed on this screen are sorted by SW Product Alias rather than License ID as one might expect. This anticipates a user preference to browse records by product.

The following bottom-line commands are unique to this screen:

- **.Entitlement** - activates an items page that lists the purchased entitlements from which the license's rights-to-use are derived.
- **Items_Allocation** - activates an items page that lists the host machines and sites to which the license has been allocated. The license's rights-to-use must have first been mapped to at least one entitlement before the license can be allocated.

Add or modify information about software licenses using Table 4.2.4.3-62 as a guide. For each license, use the **.Entitlement** command to map its rights-to-use to one or more entitlements, then use the **Items_Allocation** command to invoke the License Allocations page in order to map the license to the sites and hosts where the license is to be installed.

Table 4.3.4-62. License Manager Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
License Id	String	20	required	Unique designator for a license.
DOC FILE #	String	20	optional	Identifier under which any hardcopy records or correspondence pertaining to the license have been filed.
SW PRODUCT ALIAS	String	40	optional	Common name used in ECS for the licensed product and all its versions and variants.
PRODUCT VERSIONS	String	24	optional	Identifier(s) of one or more versions of the licensed product that are covered by the license.
PRODUCT FEATURES	String	54	optional	Name(s) of one or more features of the licensed product that are covered by the license.
PLATFORMS	String	15	optional	One or more codes for the types of machines to which the license applies (e.g., Sun, SGI, PC, etc.)
SERIAL NUMBER	String	30	optional	Vendor-supplied serial number for the license or the product being licensed.
LICENSE TYPE	String	16	optional	Classification that distinguishes among licenses according to rules of use. Examples include: floating (limited number of concurrent users), nodelocked (limited to use on a single machine), user (limited to use by a certain individual), project (unlimited use anywhere by individuals working on a certain project), site (unlimited use at a single site), etc.
LICENSE MANAGER	String	12	optional	Technology employed in managing the license on-line (e.g., flexlm, proprietary, etc.)
SYSTEM HANDLER	String	30	optional	Name of the system handler as provided by the license vendor.
DATE RECEIVED	Date	2	optional	Date the license key and/or data arrived.
DELIVERY METHOD	String	10	optional	Means by which the license key and/or data arrived (e.g., mail, e-mail, fax, etc.)
START DATE	Date	2	optional	Date on which the license record takes effect. As of its end date, neither the license nor any of its associated allocations are counted in computations of node or user rights against entitlements. Changing the start date causes earlier start dates in allocation records to be changed to match.
END DATE	Date	2	optional	Date on which the license record is rendered ineffective. This is not the same as the license expiration date. As of its end date, neither the license nor any of its associated allocations are counted in computations of node or user rights against entitlements. Changing the end date causes later end dates in allocation records to be changed to match.

Table 4.3.4-62. License Manager Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
LICENSE KEY	String	50	optional	String of alphanumeric characters that represent the provisions for a license in an encoded form.
HOST ID	String	20	optional	Host id of the license server machine supplied to the vendor when requesting the license. This is an information only field. Allocations of licenses to machines are accomplished via the License Allocation Manager screen.
PASSWORD	String	20	optional	Password supplied along with the license key by the vendor. This is an information only field.
LIC KEY NODE RTU	Numeric	8	optional	Number of machines on which the licensed product may be run concurrently sharing the same license key, if any. This value limits how many host allocation records can be created for the license.
LIC KEY USER RTU	Numeric	8	optional	Number of users authorized by the license to run the licensed product concurrently on a single network. This value limits the user rights-to-use that can be recorded in the license's allocation records.
KEY EXP DATE	Date	2	optional	Date on which the license key is no longer usable. This is not the same as the license end date, which is the date the license is no longer needed or used. The key expiration date is not used in computing license rights consumed against entitlements.
LICENSE KEY CHECKSUM	String	10	optional	Checksum of the license key as supplied by the license vendor. (Checksums are used by the vendors to verify that a key that was copied matches what was issued.
DATA CHECKSUM	String	10	optional	Checksum for license data supplied by the vendor.
Operator Id	String	8	system supplied	Login id of the user who created the record.
Date Entered	Date	2	system supplied	Date the record was created.
COMMENT	String	60	optional	Comment to be stored in the record.
TEXT	String	n/a	optional	A block of text associated with the current record. Use the <i>/Zoom</i> command to display and edit the text. A "T" in this field indicates text has previously been entered.
CCR	String	10	optional	Identifier for the CCR authorizing the license.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A message that can be associated with the item.

The License - Entitlements page (Figure 4.3.4.2-75) manages the mapping of a license to purchased entitlements and specifies how many node and/or user rights-to-use the license is consuming from each. The screen ensures that:

- a) the rights-to-use attributed to an entitlement do not exceed the entitlement's rights remaining;
- b) the sum of the rights being attributed to all entitlements do not exceed the rights-to-use for the license.

Use the /Add command to link a license to an entitlement, or use the /Modify command to revise how many of the entitlement's rights-to-use are being allocated by the license. Exit ADD and MODIFY modes by pressing <F3>, and return to the License Manager header screen by pressing <F3> again.

License Manager

[License] LICENSE MANAGER: Last: 5 Current: 3

License Id: 10000002 Doc File #:

Sw Product Alias: CLEARCASE

Vendor: ASC

Maint Contract: CCH4501

[Ent] LICENSE - ENTITLEMENTS: Last: 3 Current: 1

Entitlement Ein: 00163038

Sw Prod Alias: Clearcase

Vendor: ASC

Maint Contract: CCH4501

Lic Key Node Rtu:	0	Lic Key User Rtu:	205
Node Rtu Remain:	10	User Rtu Remain:	3
NODE RTU ALLOCATED:	0	USER RTU ALLOCATED:	17

Text Prior View Find Go Select Sort Note Help More Quit Zoom

Figure 4.3.4-75. License – Entitlements Page CHUI

Table 4.3.4-63 describes the fields on the License-Entitlements Page.

Table 4.3.4-63. License – Entitlements Page Field Descriptions

Field Name	Data Type	Size	Entry	Description
Entitlement Ein	String	20	required	Identifier for a purchased license entitlement. The equivalent of an EIN number.
Sw Prod Alias	String	40	system supplied	Common name used in ECS for the licensed product and all its versions and variants.
Vendor	String	6	system supplied	Code for the Vendor from whom the license entitlement was purchased.
Maint Contract	String	15	system supplied	Identifier for the Maintenance Contract under which the license entitlement is covered.
Lic Key Node Rtu	Numeric	8	system supplied	Number of machines on which the licensed product may be run concurrently sharing the same license key, if any. This value limits how many host allocation records can be created for the license.
Lic Key User Rtu	Numeric	8	system supplied	Number of users authorized by the license to run the licensed product concurrently on a single network. This value limits the user rights-to-use that can be recorded in the license's allocation records.
Node Rtu Remain	Numeric	8	system supplied	Quantity of node rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
User Rtu Remain	Numeric	8	system supplied	Quantity of user rights under a license entitlement not yet consumed by the mapping of licenses to the entitlement.
NODE RTU ALLOCATED	Numeric	8	optional	Number of node rights-to-use to be counted under the entitlement as having been consumed by the license. The value may not exceed the current value plus the node rights remaining under the entitlement.
USER RTU ALLOCATED	Numeric	8	optional	Number of user rights-to-use to be counted under the entitlement as having been consumed by the license. The value may not exceed the current value plus the user rights remaining under the entitlement.

The License Allocations items page maintains records about the hosts and sites to which software licenses have been allocated, and it has its own items page, License Allocation Additional Hosts, for identifying redundant or backup server machines on which this license will be installed.

One license allocation record is required for each host on which the license is installed where rights are to be counted as consumed. Allocations to hosts that are redundant or backup server machines are not typically counted against license entitlements and can be recorded as additional hosts associated with the allocation to the primary server if operators want them listed in license allocation reports.

The screen helps prevent licenses from being over-allocated. A license may not be allocated until it has first been mapped to at least one license entitlement, and allocations may not exceed the rights-to-use reflected in the license record or in the mappings to associated entitlements. In other words, a license cannot be allocated to:

- 1) more hosts than specified by:
 - a) the license's Node Rights-To-Use;
 - b) the sum of all Node RTU Allocated in corresponding License – Entitlement records;
- 2) more users than specified by:
 - a) the license's User Rights-To-Use;
 - b) the sum of all User RTU Allocated in corresponding License – Entitlement records.

The screen also helps operators determine if their license and license allocation records are consistent with the current name, location, and status in the EIN record for that host. An inconsistency suggests that a license-related issue may exist that should be resolved.

The following bottom-line commands are unique to this screen:

- **Items_Addl** – This command activates an items page that lists the backup or redundant server hosts for the allocated license. These items are not included when calculating the rights-to-use allocated and remaining for purchased entitlements.

Use the **/Add** command to record an allocation of a license, or use the **/Modify** command to revise details about the allocation. Use the **Items_Addl** command to identify any redundant or backup machines.



Figure 4.3.4-76. License Allocations Page CHUI

Table 4.3.4-64 describes the fields on the License Allocations Page screen.

Table 4.3.4-64. License Allocations Page Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
Alloc Sequence	Numeric	4	required	Number used for identifying uniquely the principal host allocation records for a specific license.
SW PRODUCT ALIAS	String	40	optional	Common name used in ECS for the licensed product and all its versions and variants.
License Key	String	50	system supplied	String of alphanumeric characters that represent the provisions for a license in an encoded form.
ALLOC HOST NAME	String	30	optional	ECS name of a machine to which the license is allocated.
ALLOC HOST ID	String	8	optional	Host id of a machine to which a license is allocated.
ALLOC SITE	String	6	optional	Code for the site to which the license is allocated.
ALLOC STATUS	String	1	optional	Implementation status of the license with respect to the host or site.
CODE	String	2	optional	Identifier for a type or category of note associated with the item.
NOTE	String	60	optional	A message that can be associated with the item.
USER RIGHTS TO USE	Numeric	8	optional	Quantity of user rights being consumed for this license allocation.
START DATE	Date	2	optional	Date on which the license allocation takes effect. Computations of node and user rights consumed against entitlements do not include any associated with allocations having a start date after the current date.
END DATE	Date	2	optional	Date on which the allocation of the license to the host expires. This is not the same as the license expiration date. As of its end date, an allocation is no longer counted in computations of user or node rights against entitlements.
HOST EIN	String	30	optional	EIN number of the host to which the license is allocated.
Hostname	String	30	system supplied	Name of the machine with which the Host EIN is associated.
Location	String	8	system supplied	Identifier that designates the inventory location of the Host EIN.
Status Code	String	1	system supplied	Code that designates the status of the Host EIN. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived.
Operator Id	String	8	system supplied	Login id of the user who created the record.

Table 4.3.4-64. License Allocations Page Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
Date Entered	Date	2	system supplied	Date the record was created.
COMMENT	String	60	optional	Comment to be stored in the record.
TEXT	String	n/a	optional	A block of text associated with the current record. Use the /Zoom command to display and edit the text. A "T" in this field indicates text has previously been entered.

The License Allocation Additional Hosts screen (Figure 4.3.4-77) maintains records about backup or redundant license servers for machines to which a license has been allocated. Identifying additional hosts has no effect on calculations of entitlements' node or user rights-to-use consumed or remaining, but is useful for tracking where licenses are supposed to be or may be installed. As a convenience, the screen lets operators specify a Host EIN to facilitate corroborating license allocation data with data in ILM property records.

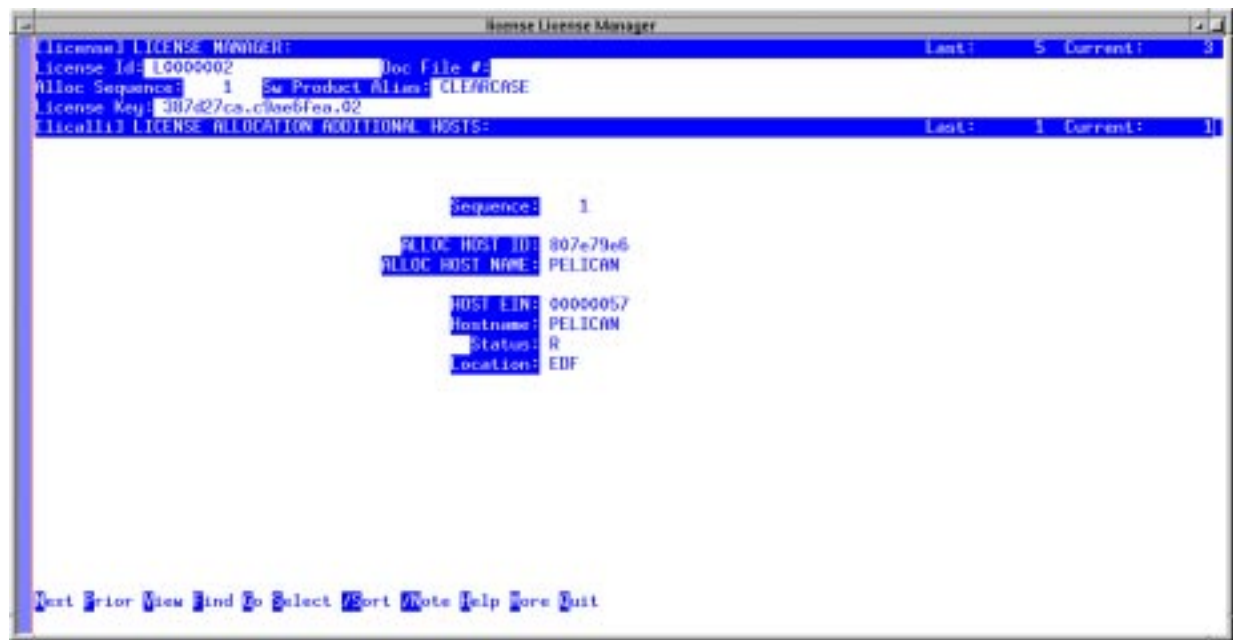


Figure 4.3.4-77. License Allocation Additional Hosts CHUI

Table 4.3.4-65 describes the fields on the License Allocation Additional Hosts screen.

Table 4.3.4-65. License Allocation Additional Hosts Field Descriptions

Field Name	Data Type	Size	Entry	Description
Sequence	Numeric	4	required	Number used for identifying uniquely the records that describe the backup or redundant license servers for a machine allocated a specific license.
ALLOC HOST ID	String	20	optional	Host id of a machine that is a backup or redundant license server for the one to which the license is principally allocated.
ALLOC HOST NAME	String	30	optional	ECS name of a machine that is a backup or redundant license server for the one to which the license is principally allocated.
HOST EIN	String	30	optional	EIN number of the host to which the license is allocated.
Hostname	String	30	system supplied	Name of the machine with which the Host EIN is associated.
Status	String	1	system supplied	Code that designates the status of the Host EIN. The following values are set when processing transactions: R = Received; S = Shipped; I = Installed; X = Archived.
Location	String	8	system supplied	Identifier that designates the inventory location of the Host EIN.

4.3.4.2.7.4 License Allocation Manager Screen

The License Allocation Manager screen (Figure 4.3.4-78) maintains records about the hosts and sites to which software licenses have been allocated. The screen is a near clone of the License Allocations items page of the License Manager screen, permitting operators to browse and update all allocation records at once rather than one license at a time. Refer to Section 4.3.4.2.7.1 for the description.

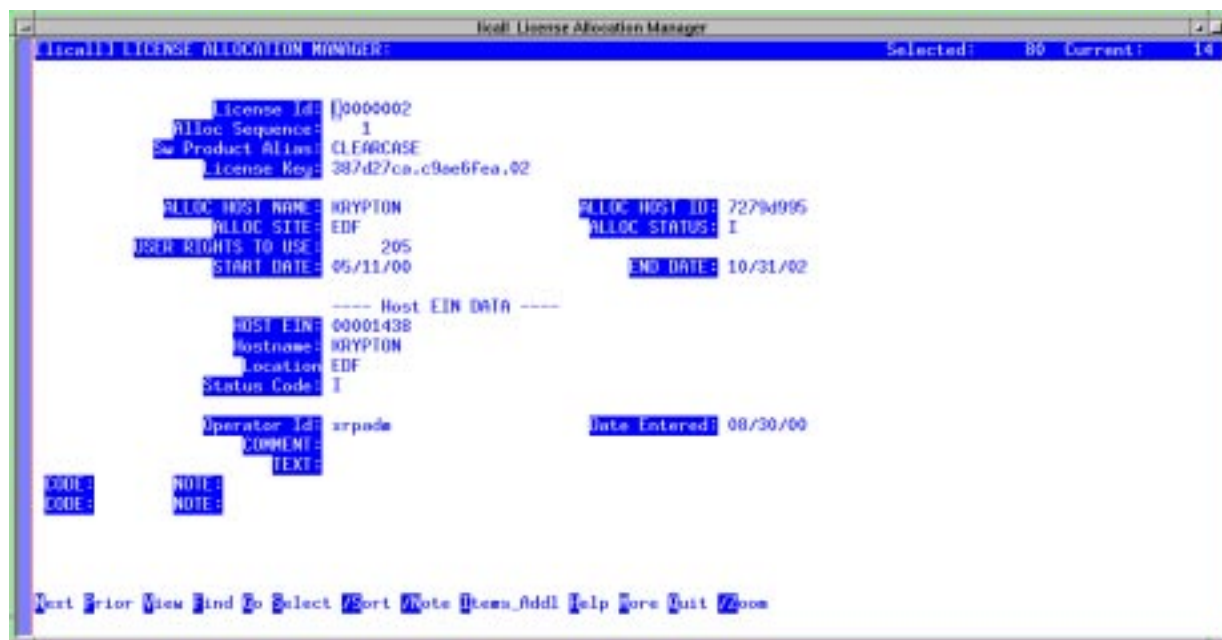


Figure 4.3.4-78. License Allocation Manager CHUI

4.3.4.2.7.5 Adjust License Quantities Screen

The Entitlement Quantity Adjustment screen (Figure 4.3.4-79) recalculates node and user rights-to-use then generates a status report detailing the status of license entitlements.



Figure 4.3.4-79. Adjust License Quantities CHUI

Table 4.3.4-66 describes the fields on the Adjust Licens Quantities screen.

Table 4.3.4-66. Adjust License Quantities Field Descriptions

Field Name	Data Type	Size	Entry	Description
[Reserved]	String	20	required; ""	Reserved for future use. Must be "" for now.
NOTE 1,2	String	40	optional	A 40-character note to include in the report.
LICENSE QTY ADJUSTMENT REPORT	Numeric	2	required	Number of copies of this report to generate.

4.3.4.2.8 ILM Master Menu

The ILM Master Menu provides access to ILM system administration capabilities typically reserved for the ILM Administrators. Figure 4.3.4-80 shows the ILM Master Menu.



Figure 4.3.4-80. ILM Master Menu

This menu helps operators navigate to the following screens:

- Employee Manager - for maintaining employee information.
- Assembly Manager - for creating parent/child relationship between components in an assembly.
- System Parameters Manager - for maintaining critical system values affecting both ILM and Baseline Manager functions.
- Inventory Location Manager - for maintaining standardized information about ECS inventory locations for all ILM processes.
- Buyer Manager - for maintaining standardized information about purchasing agents for inventory and logistics processes.
- Hardware/Software Codes - for maintaining a standard set of codes for classifying inventory items according to type.
- Status Code Manager - for maintaining a standard set of codes for classifying inventory items according to status.
- Report Number - for maintaining the Report Number conversions used to assign numbers to reports.
- Export Inventory Data - for exporting the SMC's inventory records and transferring them to other ILM systems.
- DAAC Export Inventory Data - for exporting a DAAC's inventory data and transferring them to the SMC's ILM system.
- OEM Part Numbers - for maintaining a standard set of OEM part numbers.
- Shipment Number Manager - for maintaining shipment number conversions used to assign numbers to shipments.
- Carriers - for maintaining standardized information about shipment carriers.
- ILM Import Records - for uploading inventory data that had been exported at another site.
- Sales/Purchase Terms Maintenance - for maintaining a standard set of sales/purchase terms for the inventory and logistics processes.

Reason Code Maintenance - for maintaining reason codes used to justify changes to ECS property records.

Site Codes for Scanned Data – for maintaining a standard set of codes for uniquely identifying an ECS site and building.

Scanned Data - for reviewing and editing bar code scanner data prior to updating property records.

Process Scanned Data – for updating inventory records using bar code scanner data.

Each of these screens is discussed in the sections that follow.

4.3.4.2.8.1 Employee Manager Screen

The Employee Manager screen (Figure 4.3.4-81) is used to maintain helpful information about employees, primarily those to whom inventory items have been assigned or issued. Employees are listed by number; that is, the identifier by which they are known in other screens that refer to them.

The screenshot shows a window titled "slapnetEmployee Manager". The main area displays the following information:

- EMPLOYEE NUMBER: 1234
- LAST NAME: Sustainer
- FIRST NAME: Joe E.
- STATUS: A
- WORK CENTER: EDF ECS Development Facility
- PHONE: (301) 555-5555
- FAX NUMBER: (301) 666-6666
- E-MAIL: joustain
- POWER NUMBER:
- LC MAIL:

At the bottom, there is a menu bar with the following options: Test, Prior, View, Find, Go, Select, Sort, Note, Help, More, and Quit.

Figure 4.3.4-81. Employee Manager CHUI

Table 4.3.4-67 describes the fields on the Employee Manager screen.

Table 4.3.4-67. Employee Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
EMPLOYEE NUMBER	String	10	required	Unique identifier for an employee.
LAST NAME	String	30	optional	Last name of the employee.
FIRST NAME	String	30	optional	First name of the employee.
STATUS	String	1	optional	Status of the employee.
WORK CENTER	String	6	optional	Code for work center where the employee is normally assigned. The operator may zoom to the Inventory Locations file to choose the code for the work center-type location, if it had been entered there previously. (See the Inventory Location Manager section.)
PHONE	String	18	optional	Telephone number of the employee.
FAX NUMBER	String	13	optional	FAX number of the employee.
E-MAIL	String	30	optional	E-mail address for the employee.
PAGER NUMBER	String	13	optional	Pager number for the employee.
CC MAIL	String	30	optional	CC-mail address of the employee.

4.3.4.2.8.2 Assembly Manager Screen

The Assembly Manager screen (Figure 4.3.4-82) is used to define parent/child relationships between an assembly and its components. Unlike the EIN structure relationships discussed in Section 4.3.4.2.1.3, these define the product structure of an item as it is received rather than as it is installed or issued. This facilitates the receiving process. During receiving, listing the assembly as received causes each of the assembly's components to be received instead. In order to record the assembly itself as received, it must be included as its own first component.



Figure 4.3.4-82. Assembly Manager CHUI

Table 4.3.4-68 describes the fields on the Assembly Manager screen.

Table 4.3.4-68. Assembly Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
ASSEMBLY ID	String	35	required	Identifier for an assembly. All components of the assembly can be referenced through this parent id or code.
COMPONENT ID	String	35	required	Identifier for a component of the assembly. The first component of an assembly must have the same id/code as the assembly id.
QUANTITY PER	Floating	10.3	optional	Quantity of the component in the assembly.
COST	Floating	9.2	optional	Purchase cost of the component.

4.3.4.2.8.3 System Parameters Manager Screen

The System Parameters Manager screen (Figure 4.3.4-83) is for maintaining system-wide XRP-II parameters and is principally used when first installing the system. Since ILM uses only a subset of the full XRP-II capabilities, this is a scaled down version of the screen described in the Section 6 of the *XRP-II System Reference Manual*. It contain only the fields needed to tailor the system to the site at which it operates.

Several fields have particular significance for ILM. The Site ID field contains the code for the ECS site where the operator's copy of XRP-II is installed. The field is interrogated by ILM processes

that have to determine which assets belong to the local site. The Last EIN field is used by XRP-II to keep track of the most recently used, automatically-assigned EIN. It updates the field whenever an operator presses <RETURN> in the EIN field when creating records via EIN Entry. The NASA Contract Number and Default MFG Year fields contain values used as defaults when creating ILM records, and the Export Functioning field precludes more than one export process from running at a time because they would conflict.



Figure 4.3.4-83. System Parameters Manager CHUI

Table 4.3.4-69 describes the fields on the System Parameters Manager screen.

Table 4.3.4-69. System Parameters Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
SYSTEM PARAMETER KEY	String	1	required	Code that designates the active record in XRP-II's system parameter table. The active record must have the value "A".
SITE ID	String	6	optional	Code that identifies the ECS site where this XRP-II system is installed.
LAST CONTROL ITEM ID	String	20	system- supplied, but modifiable	Code used in determining the next sequentially-available identifier when assigning control item identifiers automatically.
LAST EIN	String	20	system- supplied, but modifiable	Code used in determining the next sequentially-available identifier when assigning ein numbers automatically.
USE BRANCH AS ORDER PREFIX	String	1	optional	Code that, if "Y", causes all new purchase orders, work orders, and sale orders to be prefixed with the site code of the operator or, if null, the default site code.
STARTING RAM	Number	8	optional	Initial amount of memory XRP-II is to use.
NASA CONTRACT NUMBER	String	11	optional	Code that is used by NASA to identify the ECS contract. It is attached to all property records.
DEFAULT MFG YEAR	String	4	optional	Year used as default to identify when an item was built.
EXPORT FUNCTIONING	String	1	required	Code that indicates if an XRP-II data "export" function is in progress; used to prevent multiple export routines being run concurrently.

4.3.4.2.8.4 Inventory Location Manager Screen

The screen shown in Figure 4.3.4-84 is used to maintain information about ECS inventory locations. This standardized information is available to other screens and reports, which can access it by reference to a location's ID.

Note: An important distinction is made in XRP-II between an ECS site and an inventory location. Sites are officially designated by NASA and generally include the SMC, DAACs, and other official support installations. ECS Property Administrators designate inventory locations for purposes of property management. They are typically facilities or locales where inventory items are stored or installed at a site. Inventory locations are sometimes assigned the same names and codes as a site, but XRP-II treats the two as different entities.



Figure 4.3.4-84. Inventory Location Manager CHUI

Table 4.3.4-70 describes the fields on the Inventory Location Manager screen.

Table 4.3.4-70. Inventory Location Manager Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
MATERIAL LOCATION ID	String	6	required	Identifier for the inventory location where material can be found.
LOC DESC	String	30	optional	Description of the location.
LOCATION TYPE	String	1	optional; S, R, N, W, or A	Code that distinguishes among inventory locations according to purpose. Null or S = stock, R = received, N = non-nettable, W = work center, A = archive.
SITE	String	6	optional	Code for the ECS site hosting the inventory location. The operator may zoom to the Site Master screen and pick a code, if it had been entered there previously. (See the Site Master Manager section.)
SHIPPING REPORT NUMBER	Number	2	system-supplied	The installation report number used when an EIN was last installed at the location.
SHIPPING REPORT ALPHA	String	2	system-supplied	The alpha code used with the installation report when an EIN was last installed at the location.

Table 4.3.4-70. Inventory Location Manager Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
CONSIGNEE NAME	String	30	optional	Name of individual/office responsible for material at the site.
ADDRESS 1	String	30	optional	First part of the inventory location's address.
ADDRESS 2	String	30	optional	Second part of the inventory location's address.
CITY	String	20	optional	City part of the inventory location's address.
STATE	String	2	optional	State 2 character abbreviation of the address.
ZIP	String	10	optional	Zip code of the inventory location's address.
PHONE	String	18	optional	Telephone number for a point of contact at the inventory location.

4.3.4.2.8.5 Buyer Manager Screen

The Buyer Manager screen (Figure 4.3.4-85) is used to maintain a list of purchasing agents for ILM. This information is used primarily by Purchasing Management screens and processes to ensure only authorized persons create, edit, and release purchase orders.

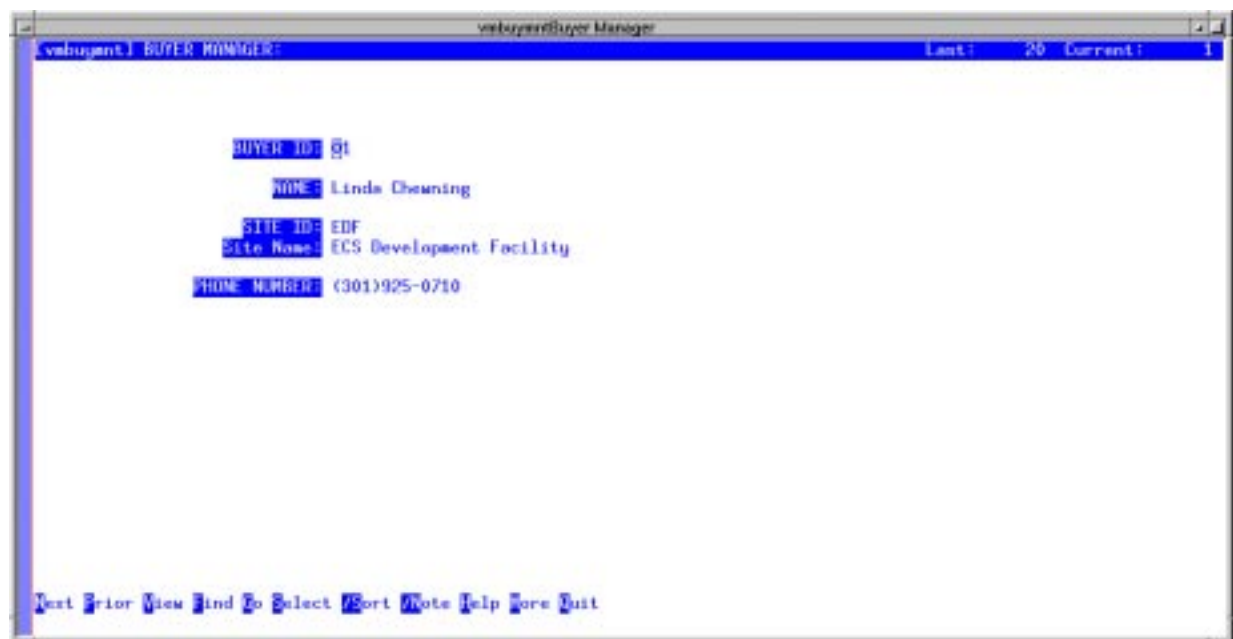


Figure 4.3.4-85. Buyer Manager CHUI

Table 4.3.4-71 describes the fields on the Buyer Manager screen.

Table 4.3.4-71. Buyer Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
BUYER ID	String	6	required	Identifier for the person authorized to purchase an item.
Name	String	30	optional	Name of the buyer.
SITE ID	String	6	optional	Code for the ECS site where the buyer works. The operator may zoom to the Site Master file and choose the code, if it had been entered there previously. (See the Site Manager section in the Baseline Manager part of this book.)
Site Name	String	46	optional	Name of the site whose code is displayed.
PHONE NUMBER	String	18	optional	Telephone number of the Buyer whose identifier is displayed.

4.3.4.2.8.6 Hardware/Software Codes Screen

Operators use the Hardware/Software Codes screen (Figure 4.3.4-86) to maintain a standard set of codes for distinguishing among items according to source of maintenance costs. These codes are associated with EIN items and are essential for grouping the items for reporting and browsing.

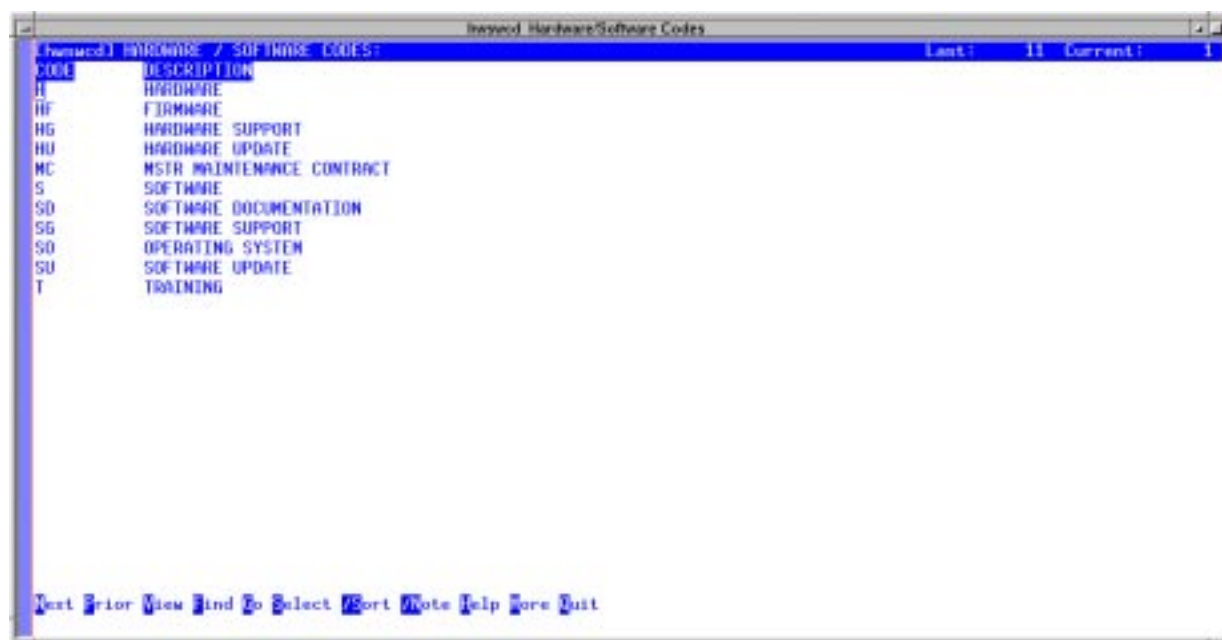


Figure 4.3.4-86. Hardware/Software Codes CHUI

Table 4.3.4-72 describes the fields on the Hardware/Software Codes screen.

Table 4.3.4-72. Hardware/Software Codes Field Descriptions

Field Name	Data Type	Size	Entry	Description
CODE	String	10	required	Code for classifying items according to source of maintenance costs.
DESCRIPTION	String	30	optional	Description for the Hardware/Software code.

4.3.4.2.8.7 Status Code Manager Screen

The Status Code Manager screen (Figure 4.3.4-87) maintains a set of standardized status codes for tracking property and events in the inventory and logistics processes.



Figure 4.3.4-87. Status Code Manager CHUI

Table 4.3.4-73 describes the fields on the Status Code Manager screen.

Table 4.3.4-73. Status Code Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
CODE	String	4	required	Code for an inventory status for an item.
DESCRIPTION	String	30	optional	Description for the code.

4.3.4.2.8.8 Report Number Screen

The screen shown in Figure 4.3.4-88 helps operators maintain the sequence in which report alpha characters are to be assigned. This information is used by the EIN shipping and installation processes. Referring the first record in the figure for an example, if the most recent alpha character used in the shipping report for an EIN was “BY”, then its next shipping report will use “BZ” and this value will be stored in the EIN’s record at that time.

ILM is deployed with 78 report number records to accommodate alpha characters A thru BZ. Should reports exceed 78 iterations, use this screen to add records for characters CA and beyond.



Figure 4.3.4-88. Report Number CHUI

Table 4.3.4-74 describes the fields on the Report Number screen.

Table 4.3.4-74. Report Number Field Descriptions

Field Name	Data Type	Size	Entry	Description
OLD	String	4	required	Alpha character used to identify the most recent iteration of a report.
NEW	String	4	required	Alpha character to use in the next iteration of the report.

4.3.4.2.8.9 Export Inventory Data Screen

The Export Inventory Data screen (Figure 4.3.4-89) supports the transfer of SMC inventory data to other locations. It extracts, and distributes to remote sites, copies of centrally-managed ILM records changed since the last time this function was used. XRP-II can ftp the files to up to nine remote hosts specified by the operator.

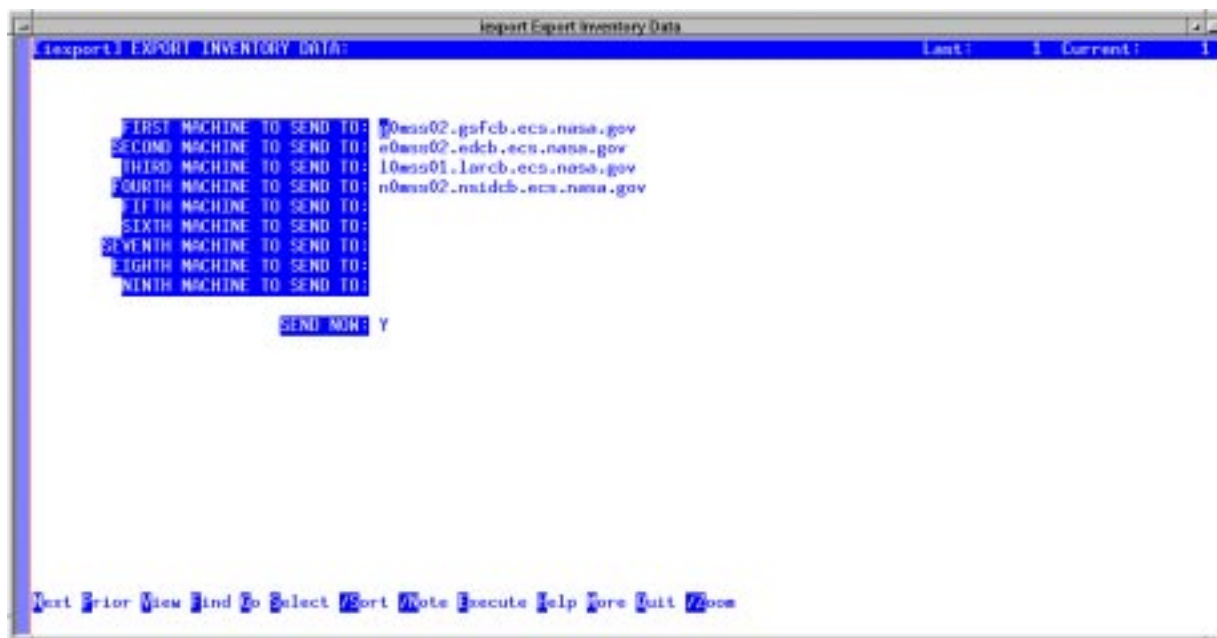


Figure 4.3.4-89. Export Inventory Data CHUI

XRP-II analyzes the transaction log to determine what data changed and which records were affected. EIN, EIN structure, purchase order, work order, inventory, and transaction history records that changed are copied and stored in files compatible with XRP-II's ILM Import Records utility. These files are, in turn, archived as tar files, one per destination host the operator specifies. Each tar file is given a name that identifies the date and time the export was done, the origination site, the file's type, and the machine to which the file is to be sent. If the SEND NOW feature is used, XRP-II attempts to transfer the files via ftp then moves them from the export directory to an archive directory. Otherwise, the files remain in the export directory to be transferred manually.

Enter the name of one or more hosts to receive the data (using either domain names or IP addresses), and choose whether or not to ftp the data files immediately after they are created. Names can be selected from a list of servers (see Section 4.3.3.2.11.5) by using the /Zoom command. Use Execute to begin data extraction and, if prompted, provide a login account and a password for the ftp. As processing progresses, XRP-II will display informational messages; including some that contain the names of the tar files that are created. Messages that terminate with the symbol ">" require an operator response. Hit any key and processing will continue. XRP-II returns to the System Utilities menu when done..

Note: Export files that are transferred manually to a destination machine must also be moved manually to the archive directory.

Note: The export directory and its corresponding export archive directory are configuration parameters named via program environment variables set in the XRP-II configuration files during installation.

Table 4.3.4-75 describes the screen's fields.

Table 4.3.4-75. Export Inventory Data Field Descriptions

Field Name	Data Type	Size	Entry	Description
MACHINE TO SEND TO	String	40	required	Full domain name or IP address of the machine to receive the exported inventory data.
SEND NOW	String	1	optional; Y or N	Flag to indicate if the export tar file is to be sent now.

4.3.4.2.8.10 DAAC Export Inventory Data Screen

ILM at the SMC can maintain consolidated records about inventory, logistics, and maintenance activities system-wide. Records created at local sites can be exported and shipped to the SMC where they can be added to records that were centrally created. For ECS, only records about items at the site are to be exported.

The DAAC Export Inventory Data utility supports this customized export process. It generates a formatted data file containing site records changed but not previously exported, and optionally transfers the file via ftp to a machine at the SMC. Operators at the SMC use the ILM Import Records utility (see Section 4.3.4.7.16) to load the data into the system there.

The screen in Figure 4.3.4-90 initiates the export process. XRP-II analyzes the transaction log to determine what data changed since the last time the function was used and which site items were affected. EIN, EIN structure, purchase order, work order, inventory and transaction history records are copied and stored in files compatible with XRP-II's ILM Import Records utility. These files are, in turn, archived in a tar file. The tar file is given a name that identifies the date and time the export was done, the origination site, the file's type, and the machine to which the file is to be sent. If the SEND NOW feature is used, XRP-II transfers the files via ftp then moves them from the export directory to an archive directory. Otherwise, the files remain in the export directory to be transferred manually.

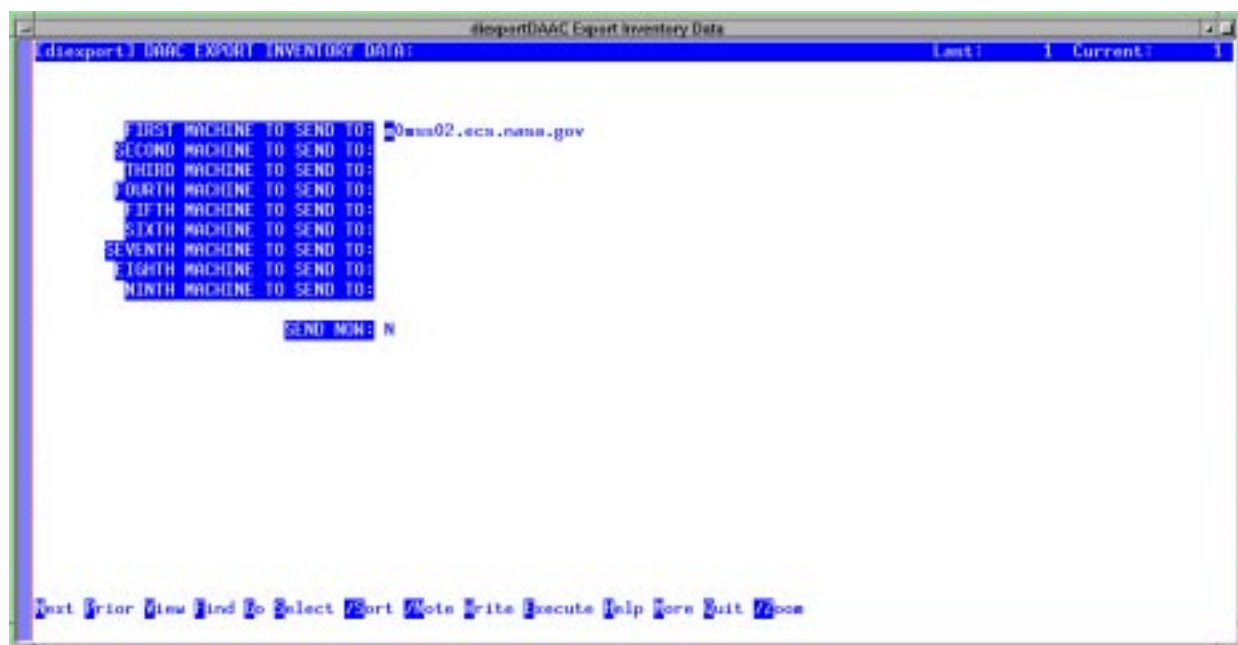


Figure 4.3.4-90. DAAC Export Inventory CHUI

Enter the name of the machine to receive the data (using its domain name or IP address), and choose whether or not to ftp the tar file immediately after it is created. The name can be selected from a managed list by using XRP-II's /Zoom command. Use **Execute** to begin data extraction and, if prompted, provide a login account and a password for the ftp. As processing progresses, XRP-II will display informational messages, including some that contain the name of the tar file that are created. Messages that terminate with the symbol ">" require an operator response. Hit any key and processing will continue. XRP-II returns to the System Utilities menu when done.

Note: Export files that are transferred manually to a destination machine must also be moved manually to the export archive directory.

Note: The export directory and its corresponding export archive directory are configuration parameters named via program environment variables set in the XRP-II configuration files during installation.

Table 4.3.4-76 describes the screen's fields.

Table 4.3.4-76. DAAC Export Inventory Data Field Descriptions

Field Name	Data Type	Size	Entry	Description
MACHINE TO SEND TO	String	40	required	Full domain name or IP address of the machine to receive the exported inventory data.
SEND NOW	String	1	optional; Y or N	Flag to indicate if the export tar file is to be sent now.

4.3.4.2.8.11 OEM Part Numbers (EDF) Screen

Operators use the OEM Part Numbers (EDF) screen (Figure 4.3.4-91) to maintain standardized information about manufacturer's or developer's parts. Part numbers must be recorded before they can be added to a purchase order via purchase order screens and, consequently, before items (especially consumables) can be processed as received.

Parts are listed in part number order, and much of the data is used by other screens and processes.

The screenshot shows a window titled 'compart OEM Part Numbers (EDF)'. The window has a status bar at the top right showing 'Last: 5682' and 'Current: 2'. The main area displays the following fields:

- OEM PART: 540-2037-01
- MANUFACTURER: SUN
- OEM MOD/VER: 4.2 GB
- OEM DESCRIPTION: 4.2 GB HD - Internal for SSA
- CONTRL ITEM ID:
- ECS PART ALIAS: SUN 4.2 Drive
- VENDOR: SUN
- COST: 0.00
- PART CODE: H
- NAME YEAR: 1997
- MEDIA CODE:
- MEDIA:

At the bottom of the window, there is a menu bar with the following options: Exit, Prior, View, Find, Go, Select, Sort, Note, Help, and Quit.

Figure 4.3.4-91. OEM Part Numbers Screen

Table 4.3.4-77 describes the fields on the OEM Part Numbers screen.

Table 4.3.4-77. OEM Part Numbers (EDF) Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
OEM PART (Part numbers)	String	34	required	Manufacturer's or vendor's part number for an item.
MANUFACTURER (Part numbers)	String	40	optional	Code for the manufacturer of the item.
OEM MOD/VER (Part numbers)	String	24	optional	Model or version of the item.
OEM DESCRIPTION (Part numbers)	String	40	optional	Manufacturer's or vendor's description of the item.

Table 4.3.4-77. OEM Part Numbers (EDF) Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
CONTROL ITEM ID	String	20	optional	Identifier of a corresponding, version-controlled item in the BASELINE MANAGEMENT system. The operator may enter the ID if known, or perform a zoom to the baseline data file.
ECS PART ALIAS	String	40	optional	Common name used in ECS for a product and all its versions and variants.
VENDOR (Part numbers)	String	6	optional	Code for the vendor from whom the item is purchased. The operator may zoom to the Vendor file and choose the code, if it had been entered there previously. (See the Vendor Master section.)
COST	Floating	9.2	optional	Purchase cost of the item.
HD/SW CODE	String	10	optional	Code for classifying items according to source of maintenance costs.
YEAR MFG	String	4	optional	Year (4-digit) the item was manufactured. This field defaults to the year specified in the system parameters data file.
MEDIA CODE	String	4	optional	Code for Media identification.
MEDIA	String	10	optional	Media material.

4.3.4.2.8.12 Shipment Number Manager Screen

Operators use the Shipment Number Manager screen (Figure 4.3.4-92) to browse – and update if necessary – the numbers and alpha characters used for reporting and tracking shipments of material. Inventory locations are each be assigned a unique shipping number. Alpha characters reflect individual shipments, and are incremented during Ship EIN processing using the conversion data maintained via the Report Number screen.

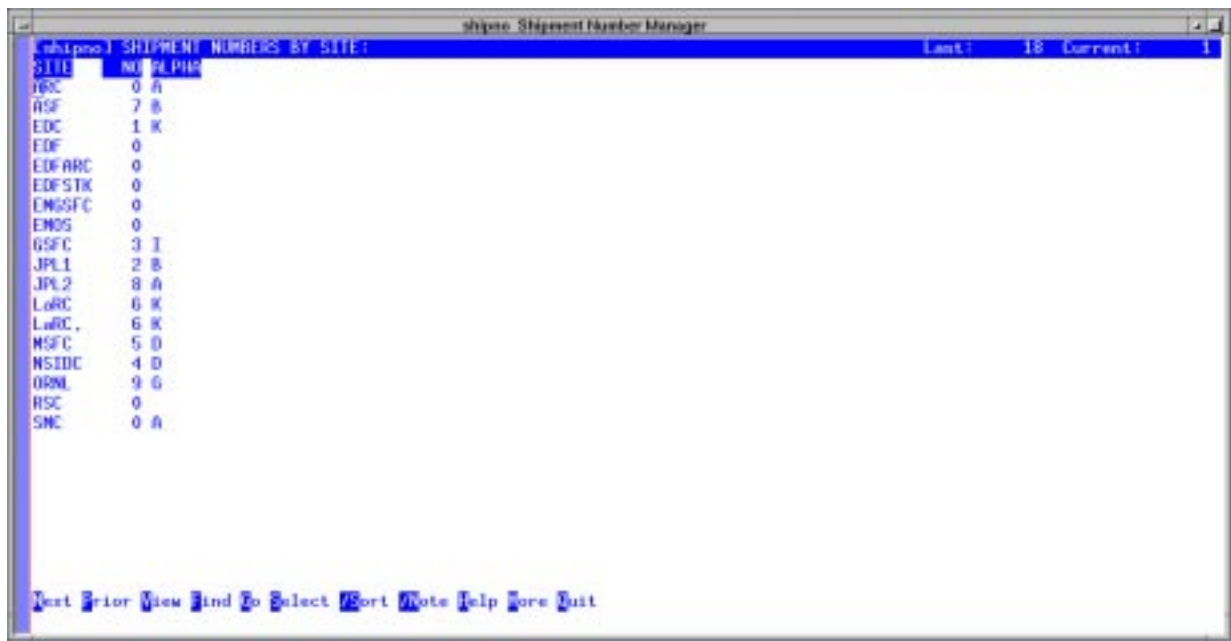


Figure 4.3.4-92. Shipment Number Manager CHUI

Table 4.3.4-78 describes the fields on the Shipment Number Manager screen.

Table 4.3.4-78. Shipment Number Manager Field Descriptions

Field Name	Data Type	Size	Entry	Description
SITE	String	6	required	Code for a "site" listed in the Inventory Location file.
NO	Numeric	4	optional; default is 0	Number assigned to all shipments for the site.
ALPHA	String	4	optional	Alpha character used to identify the most recent iteration of a report.

4.3.4.2.8.13 Carriers Screen

Operators use the Carriers screen (Figure 4.3.4-93) to maintain standardized information about carriers used for shipments. Screen Ship EIN uses this data.



Figure 4.3.4-93. Carriers CHUI

Table 4.3.4-79 describes the fields on the Carriers screen.

Table 4.3.4-79. Carriers Field Descriptions

Field Name	Data Type	Size	Entry	Description
CARRIER ID	String	6	required	Enter the code to be used for the carrier.
NAME (Carrier)	String	30	optional	Enter the name of the carrier corresponding to the displayed code.
STATUS (Carrier)	String	10	optional	Status of the carrier.
AMOUNT (Carrier)	A	7	optional	Amount of carrier services used.
TIMES (Carrier)	String	8	optional	Number of times carrier has been used.

4.3.4.2.8.14 ILM Import Records Screen

ILM data will be exchanged among ECS sites on a routine basis. The ILM Import Records utility is designed to load data from tar files that had been created and forwarded using either of XRP-II's two ILM data export utilities (see Sections 4.3.4.2.7.9 and 4.3.4.2.7.10).

The screen shown in Figure 4.3.4-94 starts the import process. Entering "Y" at the prompt causes XRP-II to process all files in the directory named in the IMPORTPATH environment variable. Import tar files -- whose names indicate the date and time they were made -- are processed in chronological order as determined from their file names. Upon completion, the original files are moved to an archive directory named in the IMPORTARC environment variable.

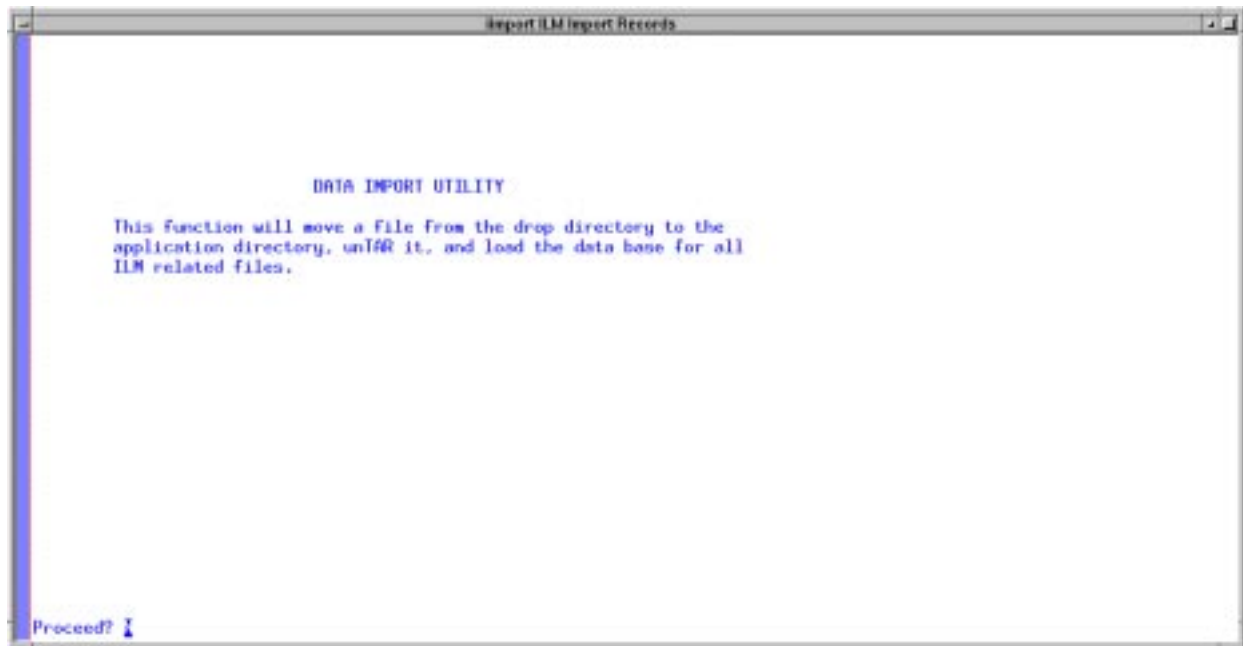


Figure 4.3.4-94. ILM Import Records CHUI

4.3.4.2.8.15 Sales/Purchase Terms Maintenance Screen

The Sales/Purchase Terms Maintenance screen (Figure 4.3.4-95) maintains codes and descriptions for standard terms under which purchases are made. The data supports purchase order processing.



Figure 4.3.4-95. Sales/Purchase Terms Maintenance CHUI

Table 4.3.4-80 describes the fields on the Sales/Purchase Terms Maintenance screen.

Table 4.3.4-80. Sales/Purchase Terms Maintenance Field Descriptions

Field Name	Data Type	Size	Entry	Description
TERMS CODE	String	2	required	Code for the default payment terms for invoices for a vendor.
TERMS DESCRIPTION	String	20	optional	Description of the terms.
DISCOUNT PERCENT	String	3	optional	Discount percent if available.
DISCOUNT DAYS	String	3	optional	Days to pay invoice to get discount.
DAYS FOR NET	Numeric	3	optional	Days to pay before getting penalized for late payment.
STATUS	String	1	optional	Code the status of the code. Codes can be designated as inactive.

4.3.4.2.8.16 Reason Code Maintenance Screen

Operators use the Reason Code screen (Figure 4.3.4-96) to maintain standard codes and descriptions of reasons for inventory and maintenance management transactions.



Figure 4.3.4-96. Reason Code Maintenance CHUI

Table 4.3.4-81 describes the fields on the Reason Code Maintenance screen.

Table 4.3.4-81. Reason Code Maintenance Field Descriptions

Field Name	Data Type	Size	Entry	Description
REASON CODE	String	2	required	Code for a "reason".
DESCRIPTION	String	20	optional	Description of the reason.

4.3.4.2.8.17 Site Codes for Scanned Data Screen

This screen (Figure 4.3.4-97) allows operators to maintain a set of standard codes and descriptions for identifying ECS sites and buildings. Each code represents one site/building pair. They are used to decipher location codes used in bar code scanner data imported into ILM.

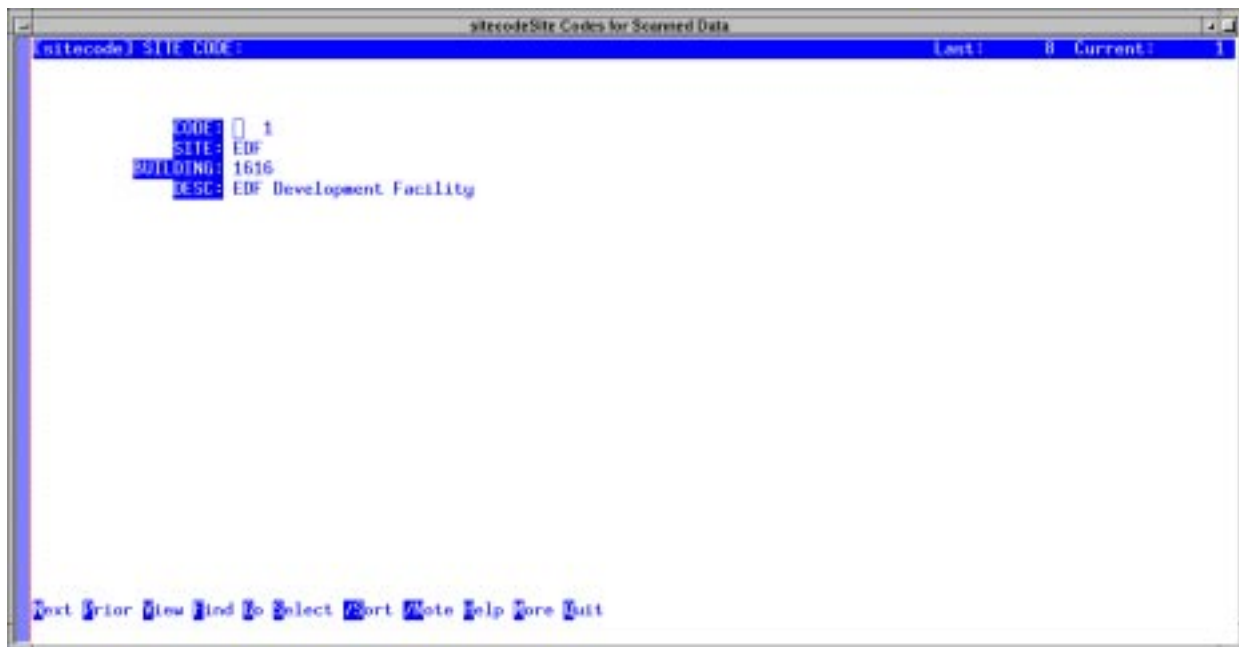


Figure 4.3.4-97. Site Codes for Scanned Data CHUI

Table 4.3.4-82 describes the fields on the Site Codes for Scanned Data screen.

Table 4.3.4-82. Site Codes for Scanned Data Field Descriptions

Field Name	Data Type	Size	Entry	Description
CODE	Numeric	4	required	Code assigned to a Site and Building.
SITE	String	6	optional	Code for an ECS site. The operator may zoom to the Site Master file to choose the code, if it had been entered there previously. (See the Site Master Manager section.)
BUILDING	String	6	optional	Identifier for the building where an item can be found.
DESC	String	40	optional	Description of the Site/Bldg combination.

4.3.4.2.8.18 Scanned Data Screen

The Scanned Data screen (Figure 4.3.4-98) presents a set of bar code scanner data that had been loaded into ILM but not yet processed. It allows operators to review and edit scanned data that has been pre-processed and to create additional data if desired. Records are typically imported using ILM's scan data processing function, which also deletes them after they have been processed successfully.

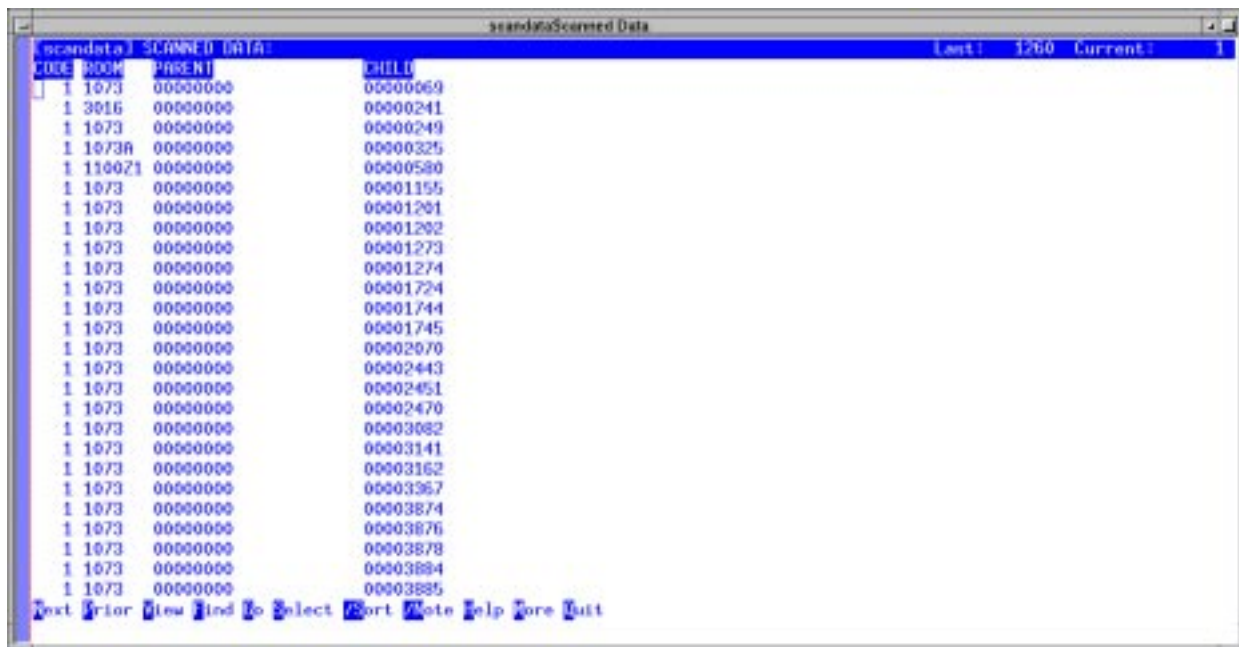


Figure 4.3.4-98. Scanned Data CHUI

Table 4.3.4-98 describes the fields on the Scanned Data screen.

Table 4.3.4-83. Scanned Data Field Descriptions

Field Name	Data Type	Size	Entry	Description
CODE	Numeric	4	required	Code assigned to a Site and Building.
ROOM	String	4	optional	Scanned room number.
PARENT	String	20	optional	Scanned Parent EIN.
CHILD	String	20	optional	Scanned Child EIN.

4.3.4.2.8.19 Process Scanned Data Screen

The Process Scanned Data screen (Figure 4.3.4-99) controls the updating of ECS property records using information about EINs derived from bar code readers. The bar code data is typically obtained during a physical inventory or audit and is stored in a file specially formatted for processing by XRP-II.

Operators can load data from the file and pre-process it to identify conflicts between it and information already stored in the ILM database. Among others, discrepancies can include:

- EINs that were found by the audit but are not known to ILM;
- EINs designated in ILM as a child of a parent but found associated with a different parent in the bar code data; and,

- parent EINs shown in ILM as being at the site but missing in the data. The Preprocess Data Report itemizes the findings.

Operators process the data after the discrepancies are resolved, at which time the system updates the property records to reflect the location, building, and room for the EINs in the file. However, the database remains unchanged for EINs that still have product structure discrepancies and for those that have not yet been added to ILM.

Figure 4.3.4-99. Process Scanned Data CHUI

Table 4.3.4-84 describes the fields on the Process Scanned Data screen.

Table 4.3.4-84. Process Scanned Data Field Descriptions (1 of 2)

Field Name	Data Type	Size	Entry	Description
CLEAR DATA FILE (Y/N)	String	1	optional; Y or N	Flag designating whether or not to clear previously loaded scanned data records before starting the pre-processing or processing activity.
LOAD SCANNED DATA (Y/N)	String	1	optional; Y or N	Flag designating if scanned data should be (re)loaded from the named file before starting the pre-processing or processing activity.
FILE NAME	String	40		Name of the file containing the bar code scan data to be imported.

Table 4.3.4-84. Process Scanned Data Field Descriptions (2 of 2)

Field Name	Data Type	Size	Entry	Description
RESET STATUS (Y/N)	String	1	optional; Y or N	Flag designating if processing status flags that may have been previously set in loaded data records should be reset before starting the pre-processing or processing activity. Set to Y before preprocessing.
PREPROCESS RECORDS (Y/N)	String	1	optional; Y or N	Flag designating whether or not to compare scanned data to existing inventory records before updating the database.
ELIMINATE DUPLICATES (Y/N)	String	1	optional; Y or N	Flag designating if duplicate records are to be eliminated from scanned data. Applies to pre-processing only.
REPORT MISSING CHILDREN (Y/N)	String	1	optional; Y or N	Flag designating whether or not to report child EINs not found in the scanned data. Applies to pre-processing only.
REPORT VALID RECORDS (Y/N)	String	1	optional; Y or N	Flag designating whether or not to report records found to be valid in the scanned data file. Applies to pre-processing only.
REPORT MISSING PARENTS (Y/N)	String	1	optional; Y or N	Flag designating whether or not to report “top-level” EINs not found in the scanned data. Applies to pre-processing only.
PROCESS RECORDS (Y/N)	String	1	optional; Y or N	Flag designating whether or not to update location information in the database based on the scanned data.
CLEAR DATA REPORT	Numeric	2	required	Number of copies of “CLEAR DATA FILE” report desired.
LOAD DATA REPORT	Numeric	2	required	Number of copies of “LOAD DATA FILE” report desired.
RESET DATA REPORT FILE	Numeric	2	required	Number of copies of “RESET DATA FILE” report desired.
PREPROCESS DATA REPORT	Numeric	2	required	Number of copies of “PREPROCESS RECORDS” report desired.
PROCESS DATA REPORT	Numeric	2	required	Number of copies of “PROCESS RECORDS” report desired.

4.3.4.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To access the ILM document, refer to the COTS Release Notes Index web page of the EDHS. The current URL is <http://cmdm.east.hitc.com/baseline/cots/>.

4.3.4.3.1 Interfaces and Data Types

Not applicable.

4.3.4.4 Databases

The XRP-II application uses the COTS product UNIFY for database functions. Refer to the UNIFY documentation listed in Section 4.3.4.

4.3.4.5 Special Constraints

None.

4.3.4.6 Outputs

Outputs from the XRP-II application for ILM are generated in several ways as listed in Table 4.3.4-85.

Table 4.3.4-85. Outputs

Output	Description and Format
CHUI displays	Menus and functions described in Section 4.3.4.2.
ILM Reports	Reports generated from Report selections on the ILM menu CHUIs.
ILM ad hoc reports	Reports generated using the /Report option on ILM CHUIs.
Prints of CHUI displays	Screen prints of the displayed information.
File output	Files generated with the Write option on ILM CHUIs.
Data base updates	ILM Add, Insert, Copy, Delete, and Modify actions.

4.3.4.7 Event and Error Messages

Error messages from ILM that originate from data storage access conflicts are documented in Appendix E of the *UNIFY Direct HLI Programmer's Manual*.

4.3.4.8 Reports

Table 4.3.4-86 identifies the predefined reports available in ILM. The figures that follow present a sample of each.

Table 4.3.4-86. Reports (1 of 3)

Report Type	Report Description	When and Why Used
Logistics Management		
Open Purchase Order by PO (Figure 4.3.4-100)	A list of the items on open purchase orders, sorted by purchase order and line item sequence number.	Whenever the status of purchase orders in work must be reported.
Open Purchase Orders by Part (Figure 4.3.4-101)	A list of the items on open purchase orders, sorted by part number, purchase order, and line item sequence number.	Whenever the status of part purchases must be reported.
Open Purchase Orders by Due Date (Figure 4.3.4-102)	A list of the items on open purchase orders, sorted by date due, part number, purchase order, and line item sequence number.	Whenever the schedule of pending deliveries must be reported.
Open Purchase Orders by Vendor and Date Due (Figure 4.3.4-103)	A list of the items on open purchase orders, sorted by vendor, date due, purchase order, and line item sequence number.	Whenever vendor performance must be reported.
Purchase Order (Figure 4.3.4-104)	Details about one or more operator-specified purchase orders having “firm planned” or, optionally, “released” status intended for use with pre-printed forms.	Whenever a purchase is required.
Receiving		
Receiving Report (Figure 4.3.4-105)	A list of the items in operator-selected receipts, grouped by receipt and sorted by purchase order line item number	Whenever a history of receiving activity must be reported.
Receipts by Part (Figure 4.3.4-106)	A list of the receipts for parts during an operator-specified timeframe, grouped by part number then sorted by date.	Whenever a history of having received certain parts is required.
Receipts by Vendor (Figure 4.3.4-107)	A list of the receipts for parts during an operator-specified timeframe, grouped by vendor then sorted by receipt number.	Whenever a history of having received parts from a certain vendor is required.
Receipt List by Part (Figure 4.3.4-108)	A list of items received sorted by part number, purchase order, and receive date.	Whenever a history of receiving activity is required.
Inventory/Property Management		
ILM Inventory – By Location (Figure 4.3.4-109)	A list of EINS by inventory location.	This report would be used to assist in performing an Inventory Audit.
ILM Costed Inventory Report – By Location (Figure 4.3.4-110)	A list of EINS by inventory location with unit costs.	Whenever a financial audit is required.
EIN Structure (Figure 4.3.4-111)	This report provides a listing of equipment with parent and child (parts) of equipment to assemble.	Whenever equipment with parts are provided to a site to determine and track parts of equipment and for maintenance.

Table 4.3.4-86. Reports (2 of 3)

Report Type	Report Description	When and Why Used
EOSDIS Equipment Installation/Receipt Report by ECN Number (Figure 4.3.4-112)	A receipt describing a operator-specified EIN-controlled item together with all its associated components.	Whenever an audit of site property is required.
EOSDIS Equipment Installation Report by ECN Number (Figure 4.3.4-113)	A receipt describing an operator-specified EIN-controlled item together with its components having status "I" (for installed).	Whenever equipment is installed at a site to keep track of equipment available and warranties and licenses.
Installation Summary Report (Figure 4.3.4-114)	A list containing the identity and location of parent EIN items and their associated components installed during an operator-specified timeframe.	Whenever a history of installation activity is required.
EOSDIS Equipment Relocation Report (Figure 4.3.4-115)	This report provides a record of any equipment relocations within or outside of a site.	Whenever equipment is relocated from one place to another within the ECS.
ECS Shipping Report (Figure 4.3.4-116)	A description of the cartons and the items in an operator-specified shipment.	Whenever a shipment occurs.
Equipment Transfer / Receipt Report (Figure 4.3.4-117)	This report provides a list of equipment that has been targeted for transfer and a status of the receipt of the equipment at the transfer site.	Whenever equipment is moved from one place to another in the ECS for tracking and inventory purposes.
Receipts by Receipt Number (Figure 4.3.4-118)	A list of inventory items received-- sorted by receipt number -- derived from the inventory transaction log.	Whenever a history of the activity against a receipt is required.
Receipts by EIN/Part (Figure 4.3.4-119)	A list of operator-specified items received during an operator-specified timeframe, sorted by OEM part number and "from" location.	Whenever a history of the receiving activity against certain EINs is required.
Transaction History by EIN (Figure 4.3.4-120)	A list of the number and type of transactions processed for operator-specified items during an operator-specified timeframe, sorted by EIN number and "from" location.	Whenever a history of all transactins against certain EINs is required.
Transaction History for Spares (Figure 4.3.4-121)	A list of the transactions (e.g., receipts and transfers) processed for spare items during an operator-specified timeframe, sorted by OEM part number.	Whenever a history of all transactions against certain spare parts is required.
Transaction History for Consumables (Figure 4.3.4-122)	A list of the transactions (e.g., receipts and transfers) processed for consumable items during an operator-specified timeframe, sorted by OEM part number.	Whenever a history of all transactions against certain consumable parts is required.

Table 4.3.4-86. Reports (3 of 3)

Report Type	Report Description	When and Why Used
Maintenance Management		
Maintenance Work Order Report (Figure 4.3.4-123)	A full description of operator-selected work orders and the items undergoing maintenance action that they cover.	Whenever full details about certain work orders must be reported.
Work Order History Report (Figure 4.3.4-124)	A list of repaired, replaced, and replacement items, grouped by work order and sorted by EIN number.	Whenever a summary of the parts replaced is required for one or more work orders.
Work Order Status Report (Figure 4.3.4-125)	A list of operator-specified work orders that identifies the status of each and the items under maintenance each work order covers.	Whenever a summary of selected work orders is required.
License Management		
License Entitlements Status Report (Figure 4.3.4-126)	A list of purchased license entitlements for software, grouped by product, detailing the rights-to-use remaining for each.	Whenever a review of license availability is required.
License Allocations by Product Report (Figure 4.3.4-127)	A list of the software licenses allocated to hosts, grouped by product and version.	Whenever a license inventory by product is required.
License Allocations by Host Report (Figure 4.3.4-128)	A list of the software licenses allocated to hosts, grouped by host and EIN number.	Whenever a license inventory by host is required.

4.3.4.8.1 Sample Reports

(vmporeps2)
 ECS Development Facility
 Order Types: S
 All Vendors

OPEN PURCHASE ORDERS BY PO
 All Purchase Orders

DATE: 01/05/00 TIME: 13:40
 PAGE: 1
 Entry Dates: 09/01/99-12/31/99
 All Due Dates

PO	VENDOR	SEQ	PART	DESCRIPTION	DUE DATE	PUOM	QUANTITY ORDERED (puom)	TOTAL DUE (puom)	ITEM PRICE	BAL DUE EXT COST
CCW0011436	Storag	1	RW/MED-50	TAPE CLEANING CART	11/28/99		220	220.0		0.00
CCW0011436	Storag	2	RW/MED-CLN	REDWOOD CLEANING C	11/28/99		20	20.0		0.00
CCW0012600	Storag	1	MED9840-CLN	CLEANING TAPE,9840	11/29/99		150	150.0		0.00
H28508	APCON	1	ACI-6515	Cable - 15FT 68PT	12/03/99		32	32.0		0.00
H28508	APCON	2	ACI-6550	CABLE - 50 FT 68 P	12/03/99		16	16.0		0.00

Figure 4.3.4-100. Open Purchase Orders by PO Report

(vmporeps3)
 ECS Development Facility
 Order Types: S
 All Vendors

OPEN PURCHASE ORDERS BY PART
 All Purchase Orders

DATE: 01/05/00 TIME: 13:40
 PAGE: 1
 Entry Dates: 09/01/99-12/31/99
 All Due Dates

PART	DESCRIPTION	PUOM	QUANTITY ORDERED (puom)	TOTAL DUE (puom)	ITEM PRICE	BAL DUE EXT COST	DUE DATE	PO	SEQ	VENDOR
THXHC-02	TAPE CLEANING CART		25	25.0		0.00	11/28/99	310516-011	1	
RW/MED-50	TAPE CLEANING CART		220	220.0		0.00	11/28/99	CCW0011436	1	Storag
RW/MED-CLN	REDWOOD CLEANING C		20	20.0		0.00	11/28/99	CCW0011436	2	Storag
MED9840-CLN	CLEANING TAPE,9840		150	150.0		0.00	11/29/99	CCW0012600	1	Storag
ACI-6515	Cable - 15FT 68PT		32	32.0		0.00	12/03/99	H28508	1	APCON
ACI-6550	CABLE - 50 FT 68 P		16	16.0		0.00	12/03/99	H28508	2	APCON

Figure 4.3.4-101. Open Purchase Orders by Part Report

(vmporeps4)
 ECS Development Facility
 Order Types: S

OPEN PURCHASE ORDERS BY DATE DUE
 All Purchase Orders
 All Vendors

DATE: 01/05/00 TIME: 13:40
 PAGE: 1
 Entry Dates: 09/01/99-12/31/99
 All Due Dates

PART	DESCRIPTION	PUOM	QUANTITY ORDERED (puom)	TOTAL DUE (puom)	ITEM PRICE	EXT COST	DUE DATE	PO	SEQ	VENDOR
THXHC-02	TAPE CLEANING CART		25	25.0		0.00	11/28/99	310516-011	1	
RW/MED-50	TAPE CLEANING CART		220	220.0		0.00	11/28/99	CCW0011436	1	Storag
RW/MED-CLN	REDWOOD CLEANING C		20	20.0		0.00	11/28/99	CCW0011436	2	Storag
MED9840-CLN	CLEANING TAPE,9840		150	150.0		0.00	11/29/99	CCW0012600	1	Storag
ACI-6515	Cable - 15FT 68PT		32	32.0		0.00	12/03/99	H28508	1	APCON
ACI-6550	CABLE - 50 FT 68 P		16	16.0		0.00	12/03/99	H28508	2	APCON

Figure 4.3.4-102. Open Purchase Orders by Date Due Report

(vmporeps6)
 ECS Development Facility
 Order Types: S

OPEN PURCHASE ORDERS BY VENDOR AND DUE DATE
 All Purchase Orders
 All Vendors

DATE: 01/05/00 TIME: 13:40
 PAGE: 1
 Entry Dates: 09/01/99-12/31/99
 All Due Dates

VENDOR ID	PO	SEQ	PART	DESCRIPTION	PUOM DUE DATE	QUANTITY ORDERED (puom)	TOTAL DUE (puom)	ITEM PRICE	EXT COST
ALL	310516-011	1		THXHC-02	11/28/99	25	25.0		0.00
ALL	H27369	1		LABELS	11/28/99	10	10.0		0.00
						Vendor ALL	total		0.00
APCON	H28508	1		ACI-6515	12/03/99	32	32.0		0.00
APCON	H28508	2		ACI-6550	12/03/99	16	16.0		0.00
						Vendor APCON	total		0.00
STK	CCW0011436	0			**/**/**	1	1.0		0.00
STK	CCW0011436	1		RW/MED-50	11/28/99	220	220.0		0.00
STK	CCW0011436	2		RW/MED-CLN	11/28/99	20	20.0		0.00
STK	CCW0012600	1		MED9840-CLN	11/29/99	150	150.0		0.00
STK	CCW0012600	2		RWMED-CLN	11/29/99	50	50.0		0.00
						Vendor STK	total		0.00
									=====
Grand total									0.00

Figure 4.3.4-103. Open Purchase Orders by Vendor and Due Date Report

		ECS Development Facility			
				H28369	
ANICOM					
		ECS Development Facility		STOCK	
				10/07/99 1	
Destination					
1 0400-30200	10/07/99	83	91.25	7,573.75	
DELIVER TO ==> EDF					
Interim report					
				** STATE TAX TOTAL:	0.00
				** LOCAL TAX TOTAL:	0.00
				MISCELLANEOUS CHARGES:	0.00
				PURCHASE ORDER TOTAL:	7,573.75

Figure 4.3.4-104. Purchase Order

SITE: ECS Development Facility		PAGE:	
1			
RECEIVING REPORT			
PURCHASE ORDER: 0000000016		DATE: 01/28/00	
DATE		QUANTITY	
OEM PART	OEM DESCRIPTION	RXD (suom)	MODEL/VERSION
RECEIVED			
=====	=====		=====
=====			
SCM001414-00	128VOICE PCI WAVETABLE ONBOARD SOU	2.0	
//**			
		.	
		.	
		.	

Figure 4.3.4-105. Receiving Report

```

(vmrecvr)
13:39
ECS Development Facility
1
RECEIPTS BY PART
PAGE:
Receipt Dates: 05/02/99-04/01/02

*****
**
Part: 0400-30200 SC TO SC FIBER CABLE, MULTIMODE, 200 FT

DATE
TYPE ID NAME RECEIPT ENTERED ORDER NUMBER ITEM PRICE
=====
PO ANICOM ANICOM 60 01/04/00 H28369
*****
**
Part: 66729 LABELS, ATTENTION (5/8X2) 500 PER ROLL

DATE
TYPE ID NAME RECEIPT ENTERED ORDER NUMBER ITEM PRICE
=====
PO MRS MARSHALL INDUSTRIES 67 01/14/98 H28235
*****
**
Part: 81801 TAPE, FLOOR MARKING, ESD 3" X 108"

DATE
TYPE ID NAME RECEIPT ENTERED ORDER NUMBER ITEM PRICE
=====
PO MRS MARSHALL INDUSTRIES 67 01/14/98 H28235
*****
**
Part: AHA2944UWKIT

DATE
TYPE ID NAME RECEIPT ENTERED ORDER NUMBER ITEM PRICE
=====
PO ALA Alantec 332 01/04/00 317665

```

Figure 4.3.4-106. Receipts by Part Report

```

(vmrecvrl)
ECS Development Facility
                                RECEIPTS BY VENDOR
                                Receipt Dates: 05/02/99-04/01/02
                                DATE: 01/05/00    TIME: 13:39
                                PAGE: 1

*****
Vendor:  ALA      Alantec

      DATE
RECEIPT ENTERED  PURCHASE ORDER VENDOR REFERENCE    OEM PART          ITEM PRICE
=====
      332 01/04/00 317665                          AHA2944UWKIT
*****
Vendor:  ANICOM  ANICOM

      DATE
RECEIPT ENTERED  PURCHASE ORDER VENDOR REFERENCE    OEM PART          ITEM PRICE
=====
      60 01/04/00 H28369                          0400-30200
*****
Vendor:  ARCADE  ARCADE

      DATE
RECEIPT ENTERED  PURCHASE ORDER VENDOR REFERENCE    OEM PART          ITEM PRICE
=====
      70 01/15/98 H28286                          PLS16071
*****
Vendor:  MRS      MARSHALL INDUSTRIES

      DATE
RECEIPT ENTERED  PURCHASE ORDER VENDOR REFERENCE    OEM PART          ITEM PRICE
=====
      67 01/14/98 H28235                          66729
      67 01/14/98 H28235                          81801
      67 01/14/98 H28235                          CHA06742
      67 01/14/98 H28235                          CHA06745
      67 01/14/98 H28235                          CHA06850
      67 01/14/98 H28235                          CHA07780

```

Figure 4.3.4-107. Receipts by Vendor Report

(vmrecvr2)
 13:39
 ECS Development Facility
 PAGE: 1
 All part numbers
 IDs
 All vendor names

DATE: 01/05/00 TIME:

RECEIPT LIST BY PART

All part descriptions

All vendor

Receipt Dates: 05/02/99-04/01/02

OEM PART	OEM DESCRIPTION	DATE	ORDER	ID NUMBER	QUANTITY	ITEM PRICE	EXTENDED
		RECEIPT ENTERED	TYPE NUMBER		RXD (suom)		AMOUNT
0400-30200	SC TO SC FIBER CABLE, MULTIMODE, 200 FT	60 01/04/00 PO	H28369	ANICOM	84.0		0.00
66729	LABELS, ATTENTION (5/8X2) 500 PER ROLL	67 01/14/98 PO	H28235	MRS	2.0		0.00
81801	TAPE, FLOOR MARKING, ESD 3" X 108"	67 01/14/98 PO	H28235	MRS	2.0		0.00
AHA2944UWKIT		332 01/04/00 PO	317665	ALA	1.0		0.00
CHA06742	SIGN AREA WARNING	67 01/14/98 PO	H28235	MRS	2.0		0.00
CHA06745	SIGN, ATTENTION	67 01/14/98 PO	H28235	MRS	14.0		0.00
CHA06850	PADDLES, ESD TRAINING	67 01/14/98 PO	H28235	MRS	1.0		0.00
CHA07780	MAT, PORTABLE W/WRIST STRAP	67 01/14/98 PO	H28235	MRS	2.0		0.00
CHA50070	KIT/TEST/RESISTANCE/DIGITAL 120VAC	67 01/14/98 PO	H28235	MRS	1.0		0.00
CHA50259	TESTER/POCKET/SURFACE RESISTANCE	67 01/14/98 PO	H28235	MRS	7.0		0.00
CHA73720	SMOCK, BLUE LARGE	67 01/14/98 PO	H28235	MRS	14.0		0.00
CHA73730	SMOCK, BLUE X-LARGE	67 01/14/98 PO	H28235	MRS	5.0		0.00
CHA77145	MATTOP RUBBER, BLUE	67 01/14/98 PO	H28235	MRS	11.0		0.00
CHA98207	MONITOR, DUAL OPERATOR	67 01/14/98 PO	H28235	MRS	1.0		0.00
CHA98210	MONITOR, WRIST STRAP W/WORKSTATION	67 01/14/98 PO	H28235	MRS	5.0		0.00
PLS16071	TAPE FLOOR MARKING, ESD 3INCH X 108 INCH	70 01/15/98 PO	H28286	ARCADE	2.0		0.00
RW/MED-50	REDWOOD D-3 50GB CARTRIDGE	54 01/12/99 PO	CCW0011598	STK	100.0		0.00
RW/MED-50	REDWOOD D-3 50GB CARTRIDGE	54 01/12/99 PO	CCW0011598	STK	50.0		0.00
RW/MED-CLN	REDWOOD CLEANING CARTRIDGE	52 01/12/99 PO	CCW0011523	STK	5.0		0.00
RW/MED-CLN	REDWOOD CLEANING CARTRIDGE	52 01/12/99 PO	CCW0011523	STK	10.0		0.00
RW/MED-CLN	REDWOOD CLEANING CARTRIDGE	52 01/12/99 PO	CCW0011523	STK	20.0		0.00
RW/MED-CLN	REDWOOD CLEANING CARTRIDGE	54 01/12/99 PO	CCW0011598	STK	10.0		0.00
Grand Total:					349.0		0.00

Figure 4.3.4-108. Receipt List by Part Report

(ilminv1)

ILM INVENTORY REPORT - BY LOCATION

DATE: 01/07/00 TIME: 12:36

PAGE: 1

LOCATION: EDF : ECS Development Facility

EIN	OEM PART NO	OEM DESC	MODEL	SERIAL NO	BUILDING	ROOM
00000000	PARENTREC	PARENT FOR NON INSTALLED ITEMS RM 1073			1616	1073
00000004	PE301-CD	3000-300 Workstation	300X AXP	AB3500171X	1616	1073
00000006	7012-340	RISC 6000 Workstation	6000	MS70122663304	1616	1073
00000007	A2094A	Color Monitor - 19 IN		JP01000992	1616	1100D3
00000008	VRT19-HA	Color Monitor - 19 IN		IS33984574	1616	1073
00000009	7208-001	4 Milimeter Tape Unit	Model 7208	MS72062626430	1616	1073
00000010	6091-191	19 Inch Color Monitor		23-K0146	1616	1073
00000011	A2627A	715-50 PA RISC Workstation	715-50	6342A30521	1616	1100D3
00000013	S10TX-44-032-P46	SPARCStation 10	10	403F1014	1616	3039
00000014	A2094A	Color Monitor - 19 IN		JP04050797	1616	1100D3
00000015	X557A	CD ROM - 644 MB		405G1578	1616	1100D7
00000016	TLZ06-VA	Tape Drive - 4 MM		CX35103575	1616	1073
00000018	X814A	Tape Drive - 5 GB - 8 MM		407G3165	1616	1100D4
00000019	C1521B	Tape Drive - 2.0 GB - 4 MM		3314E62862	1616	1052C
00000022	PE301-CD	3000-300 Workstation	300X AXP	AB333001N2	1616	1105B1
00000023	PE301-CD	3000-300 Workstation	300X AXP	AB33300I04	1616	1073
00000025	VRT19-HA	Color Monitor - 19 IN		IS31773470	1616	1073
00000027	VRT19-HA	Color Monitor - 19 IN		IS31162480	1616	1105B1
00000028	VRT19-HA	Color Monitor - 19 IN		IS31162482	1616	1073
00000030	X545A	1.05 GB HD - Desktop		410G0301	1616	1100F4
00000031	BA353-AF	CD ROM - in Storage Expansion Unit		KB34203698	1616	1073
00000033	X545A	1.05 GB HD - Desktop		412G2197	1616	1073
00000034	PE301-CD	3000-300 Workstation	300X AXP	AB3500305S	1616	1073
00000035	X557A	CD ROM - 644 MB		408G0598	1616	1100D4
00000038	4-30-GX-32 P46	SPARCSystem LX Workstation	LX	411E0158	1616	1073
00000040	A2627A	715-50 PA RISC Workstation	715-50	6342A30520	1616	1105A2
00000041	A2608A	735 CRX Performance Workstation-Server 3	735-CRX	6342A00425	1616	1100D3
00000042	A2627A	715-50 PA RISC Workstation	715-50	6342A30034	1616	1073
00000043	A2627A	715-50 PA RISC Workstation	715-50	6340A30125	1616	1073

Figure 4.3.4-109. ILM Inventory Report – by Location

(ilminv)

ILM COSTED INVENTORY REPORT - BY LOCATION

DATE: 01/07/00 TIME: 12:37
PAGE: 1

LOCATION: EDF : ECS Development Facility

EIN	OEM PART NO	OEM DESC	MODEL	SERIAL NO	UNIT COST
00000000	PARENTREC	PARENT FOR NON INSTALLED ITEMS RM 1073			
00000004	PE301-CD	3000-300 Workstation	300X AXP	AB3500171X	
00000006	7012-340	RISC 6000 Workstation	6000	MS70122663304	
00000007	A2094A	Color Monitor - 19 IN		JP01000992	
00000008	VRT19-HA	Color Monitor - 19 IN		IS33984574	
00000009	7208-001	4 Milimeter Tape Unit	Model 7208	MS72062626430	
00000010	6091-191	19 Inch Color Monitor		23-K0146	
00000011	A2627A	715-50 PA RISC Workstation	715-50	6342A30521	
00000013	S10TX-44-032-P46	SPARCStation 10	10	403F1014	
00000014	A2094A	Color Monitor - 19 IN		JP04050797	
00000015	X557A	CD ROM - 644 MB		405G1578	
00000016	TLZ06-VA	Tape Drive - 4 MM		CX35103575	
00000018	X814A	Tape Drive - 5 GB - 8 MM		407G3165	
00000019	C1521B	Tape Drive - 2.0 GB - 4 MM		3314E62862	
00000022	PE301-CD	3000-300 Workstation	300X AXP	AB333001N2	
00000023	PE301-CD	3000-300 Workstation	300X AXP	AB33300I04	
00000025	VRT19-HA	Color Monitor - 19 IN		IS31773470	
00000027	VRT19-HA	Color Monitor - 19 IN		IS31162480	
00000028	VRT19-HA	Color Monitor - 19 IN		IS31162482	
00000030	X545A	1.05 GB HD - Desktop		410G0301	
00000031	BA353-AF	CD ROM - in Storage Expansion Unit		KB34203698	
00000033	X545A	1.05 GB HD - Desktop		412G2197	
00000034	PE301-CD	3000-300 Workstation	300X AXP	AB3500305S	
00000035	X557A	CD ROM - 644 MB		408G0598	
00000038	4-30-GX-32 P46	SPARCSystem LX Workstation	LX	411E0158	
00000040	A2627A	715-50 PA RISC Workstation	715-50	6342A30520	
00000041	A2608A	735 CRX Performance Workstation-Server 3	735-CRX	6342A00425	
00000042	A2627A	715-50 PA RISC Workstation	715-50	6342A30034	
00000043	A2627A	715-50 PA RISC Workstation	715-50	6340A30125	

Grand Total:

Figure 4.3.4-110. ILM Costed Inventory Report – by Location

(einstrep)

15:20

ECS Development Facility

EINs: 00001029

Explosion quantity: 1

//**

EIN STRUCTURE REPORT

Number of levels:

Date of bill:

PAGE:

Parent EIN: 00001029

MFG Part: S20SX-50-32-P46

Active date: **/**/**

Desc: SPARCStation 20-50 SX

Desc: SPARCStation 20-50 SX

Inactive date: **/**/**

LEVEL	EIN	MFG PART	CONTROL ITEM ID	MODEL/VERSION	QUANTITY PER	ACTIVE DATE	INACTIVE DATE
=====	=====	=====	=====	=====	=====	=====	=====
1	00000751	EXB-210TW		210	0.0000	04/12/99	**/**/**
		Tape Stacker - 8 MM					
.2	C0003845	315570-001			0.0000	04/12/99	**/**/**
		BAR CODE READER/EXB-210 & 218					
.2	C0003846	872013-025			0.0000	04/12/99	**/**/**
		8MM Tape Drive					
.2	C0003847	EXB-303220			0.0000	04/12/99	**/**/**
		Terminator					
.2	C0003848	EXB-30726			0.0000	04/12/99	**/**/**
		Tape Cartridge - 8 MM					
.2	C0003849	EXB-307627			0.0000	04/12/99	**/**/**
		Cable - SCSI					
.2	C0003850	TDKP6-1200Q			0.0000	04/12/99	**/**/**
		Tapes - 5 GB - 8 MM					
.2	C0162102	872013-025			0.0000	09/01/99	**/**/**
		8 MM Tape Drive - w/ Carriage Instal					
1	00001086	365-1324-01			0.0000	04/12/99	**/**/**
		20 Inch Color Monitor					
1	00003089	CDE-100		4X	0.0000	04/12/99	**/**/**
		Yamaha External 4X Write/4X Read CD-Rom					
1	00004692	X5511A			0.0000	04/12/99	**/**/**
		2.1 GB HD MultiPack (1 of 2 X 2.1=4.2GB)					
.2	C0021164	540-2730-03			0.0000	04/12/99	**/**/**
		2.1 GB HD Internal					
1	C0147699	SOL		2.4	0.0000	04/22/99	**/**/**
		Solaris					

There are 38 components in this bill.

Figure 4.3.4-111. EIN Structure Report

RUN DATE: 01/05/00

Page No: 1

EOSDIS
EQUIPMENT INSTALLATION/RECEIPT REPORT
BY EIN NUMBER

ECN NUMBER: 00002534
DATE ON-SITE WARRANTY EXPIRES: 12/31/98
WARRANTY END DATE: 12/31/98
HTSC HELP CENTER PHONE: 1-800-ECS-DATA
HTSC HELP CENTER HOURS ARE: 08:00 - 17:00 EST
DATE RECEIVED: 05/09/97

USER CONTACT
USER PHONE
LOCATION: Goddard
BUILDING # GSFC
ROOM #: C101
HOST NAME: g0acs03

I certify that I have received the equipment only for work associated with NASA Contract NAS5 - 60000.

Signature: _____ Date: ____/____/____

MFR	PRODUCT DESCRIPTION	MODEL/VERSION	PART NUMBER	SERIAL NUMBER	PART EIN	INSTALL DATE
SUN	Enterprise 3000 Enc, 4 Slot, CD 4, PWR/C		E3001	715V006C	00002534	05/27/97
WYE	Terminal		900983-07	0ICD6800046	00003256	03/13/98
WYE	Keyboard		901867-01	97030769	00006417	05/27/97
SUN	2.1 GB Internal HD		X5153A	9644628234	C0009199	08/12/99
SUN	250mhz Ultrasparc Modual		2530A	92F30203138	C0014226	05/27/97
SUN	250mhz Ultrasparc Modual		2530A	92F30202448	C0014227	05/27/97
SUN	CPU/Memory Board		2600A	5012976058254	C0014228	05/27/97
SUN	SBUS I/O Board - Enterprise Family		2610A	5014287011120	C0014229	05/27/97
SUN	CD ROM - Internal		370-2203-01	9715003781	C0014230	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9707363003	C0014231	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9707363312	C0014232	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9715742422	C0014233	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299929	C0014234	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299923	C0014235	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299891	C0014236	05/27/97
			.			
			.			
			.			
SUN	Solaris Media for Servers	2.5.1	SOLS-C		C0150689	05/27/97

Figure 4.3.4-112. Equipment Installation/Receipt Report by EIN Number

RUN DATE: 01/05/00

Page No: 1

EOSDIS
EQUIPMENT INSTALLATION REPORT
BY EIN NUMBER

ECN NUMBER: 00002534
DATE ON-SITE WARRANTY EXPIRES: 12/31/98
WARRANTY END DATE: 12/31/98
HTSC HELP CENTER PHONE: 1-800-ECS-DATA
HTSC HELP CENTER HOURS ARE: 08:00 - 17:00 EST
DATE RECEIVED: 05/09/97

USER CONTACT
USER PHONE
LOCATION: Goddard
BUILDING # GSFC
ROOM #: C101
HOST NAME: g0acs03

I certify that I have received the equipment only for work associated with NASA Contract NAS5 - 60000.

Signature: _____ Date: ____/____/____

MFR	PRODUCT DESCRIPTION	MODEL/VERSION	PART NUMBER	SERIAL NUMBER	PART EIN	INSTALL DATE
SUN	Enterprise 3000 Enc, 4 Slot, CD 4, PWR/C		E3001	715V006C	00002534	05/27/97
WYE	Terminal		900983-07	0ICD6800046	00003256	03/13/98
WYE	Keyboard		901867-01	97030769	00006417	05/27/97
SUN	250mhz Ultrasparc Modual		2530A	92F30203138	C0014226	05/27/97
SUN	250mhz Ultrasparc Modual		2530A	92F30202448	C0014227	05/27/97
SUN	CPU/Memory Board		2600A	5012976058254	C0014228	05/27/97
SUN	SBUS I/O Board - Enterprise Family		2610A	5014287011120	C0014229	05/27/97
SUN	CD ROM - Internal		370-2203-01	9715003781	C0014230	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9707363003	C0014231	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9707363312	C0014232	05/27/97
SUN	9.1 GB HD - 7200 RPM-3.5 Inch-F/W SCSI-2		540-2951-01	9715742422	C0014233	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299929	C0014234	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299923	C0014235	05/27/97
SUN	32 MB RAM Expansion (1 of 8X32MB=256 MB)		7022A	501265378299891	C0014236	05/27/97
			.			
			.			
			.			
SUN	Solaris Media for Servers	2.5.1	SOLS-C		C0150689	05/27/97

Figure 4.3.4-113. Equipment Installation Report by EIN Number

```

(installr)
13:42
ECS Development Facility
PAGE: 1

PARENT EIN: 00000343      NAME: judge
OEM PART: S20SX-50      OEM DESC: SPARCStation 20-50 SX
INSTALL DATE: 03/10/95
SITE: EDF      ; ECS Development Facility
BUILDING: 1616      ROOM: 1100A4

CHILDREN INCLUDED:

EIN      OEM PART      INSTALL      LOC      BLDG      ROOM      USER
=====
=====
00000343      S20SX-50      03/10/95      EDF      1616      1100A4      Geistfeld

```

Figure 4.3.4-114. Installation Summary Report

RUN DATE: 01/28/00
No: 1

Page

EOSDIS
EQUIPMENT RELOCATION REPORT
BY EIN NUMBER

NEW PARENT EIN: 00000006

ECN NUMBER: 00000006
DATE ON-SITE WARRANTY EXPIRES: 12/31/97
WARRANTY END DATE: 12/31/97
Research
HTSC HELP CENTER PHONE: 1-800-ECS-DATA
HTSC HELP CENTER HOURS ARE: 08:00 - 17:00 EST
DATE RECEIVED: 08/23/93
CCR #:

USER CONTACT
USER PHONE
LOCATION: Langely
BUILDING # 1268C
ROOM #: 1321
HOST NAME: l0moi01
TROUBLE TICKET:

INSTALL

MFR	PRODUCT DESCRIPTION	MODEL/VERSION	PART NUMBER	SERIAL NUMBER	PART EIN	DATE
=====	=====	=====	=====	=====	=====	=====
====						
IBM	RISC 6000 Workstation	6000	7012-340	MS70122663304	00000006	
10/21/93						
HPC	19 Inch Color Monitor		A2094A	JP01000992	00000007	
01/28/00						

Figure 4.3.4-115. EOSDIS Equipment Relocation Report

ECS SHIPPING REPORT				
DATE: 01/05/00				
CONTRACT # NAS5 - 60000				
SHIPPING REPORT #: 1 L		PLANNED SHIP DATE: 11/12/97		
CARRIER: Federal Express		MODE: AIR		
CARRIER BOL: test123		# OF PIECES: 2		
		ESTIMATED WEIGHT: 600.0		
ORIGIN: ECS Development Facility		DESTINATION:		
SENDER:		CONSIGNEE:		
ADDRESS:		ADDRESS:		
CITY:		CITY:		
STATE-ZIP:		STATE-ZIP:		

CTN#	DIMENSIONS	WEIGHT	QTY
2	24x24x24	200.00	2
1	12x12x12	100.00	2

MFG OEM DESC	MOD/VER	PART EIN	PARENT	SERIAL NUMBER
SUN Ultra 2 System Model 11170		00001895	00001895	647F0937

Figure 4.3.4-116. ECS Shipping Report

RUN DATE: 01/28/00

Page No: 1

EOSDIS
EQUIPMENT TRANSFER/RECEIPT REPORT
BY ECN NUMBER

ECN NUMBER: 00000004
DATE ON-SITE WARRANTY EXPIRES: 12/31/97
WARRANTY END DATE: 12/31/97
HTSC HELP CENTER PHONE: 1-800-ECS-DATA
HTSC HELP CENTER HOURS ARE: 08:00 - 17:00 EST
DATE RECEIVED: 12/17/93
CCR #:

USER CONTACT: Merritt
USER PHONE: (818)306-6061
LOCATION: ECS Development F
BUILDING #: 1616
ROOM #: 1072
HOST NAME: ETHER
TT:

MFR	PRODUCT DESCRIPTION	MODEL/VERSION	PART NUMBER	SERIAL NUMBER	PART ECN	INSTALL DATE
DEC	3000-300 Workstation	300X AXP	PE301-CD	AB3500171X	00000004	01/28/00
DEC	19 Inch Color Monitor		VRT19-HA	IS33984574	00000008	01/28/00
DEC	Tape Drive - 4 MM		TLZ06	CX35103575	00000016	01/28/00
DEC	CD ROM - in Storage Expansion Unit		BA353-AF	KB34203698	00000031	01/28/00
DEC	Mouse - 3 Button		VSXXX-GA	7A323H4085	00007719	01/28/00
DEC	Keyboard		LK401-AA	HJ342U8927	00007720	01/28/00
DEC	10 Based T Ethernet Port		10BT-ETHNET			01/28/00
DEC	Cable - SCSI cable 2 meter 2 male		BN21H-01			01/28/00
DEC	FDDI - Card		DEFTA-FA	AS42305487		01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	8 MB RAM (1 x 8 MB SIMM)		ME534-HE			01/28/00
DEC	1.05 GB HD		RZ26-EP	CX34594749		01/28/00
DEC	1.05 GB HD		RZ26-EP	CX34891643		01/28/00

.
.
.

Figure 4.3.4-117. EOSDIS Equipment Transfer/Receipt Report

(imtransr4)

15:16

ECS Development Facility

PAGE: 1

DATE: 01/05/00

TIME:

RECEIPTS BY RECEIPT NUMBER

RECEIPT NUMBER	SITE	TRANS NUMB	DATE	TIME	ORDER	LINE NO	EIN / OEM PART NUMB	VENDOR ID	QUANTITY
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
3	EDF	3	02/21/97	13:38	000001	1	34565666002	SUN	1.0
3	EDF	2	02/21/97	13:36	000001	1	34565666002	SUN	1.0
5	EDF	15	03/12/97	13:02	000029	1	HARVCD1	SUN	1.0
5	EDF	14	03/12/97	11:04	000029	1	HARVCD1	SUN	1.0
5	EDF	13	03/12/97	11:02	000029	1	HARVCD1	SUN	1.0
5	EDF	12	03/12/97	10:57	000029	1	HARVCD1	SUN	1.0
5	EDF	11	03/12/97	10:53	000029	1	HARVCD1	SUN	1.0
5	EDF	10	03/12/97	10:49	000029	1	HARVCD1	SUN	1.0
5	EDF	9	03/12/97	10:45	000029	1	HARVCD1	SUN	1.0
5	EDF	8	03/12/97	10:41	000029	1	HARVCD1	SUN	1.0
5	EDF	7	03/12/97	10:39	000029	1	HARVCD1	SUN	1.0
5	EDF	6	03/12/97	10:36	000029	1	HARVCD1	SUN	1.0
5	EDF	5	03/12/97	10:35	000029	1	HARVCD1	SUN	1.0
6	EDF	630	03/21/97	08:02	577HP	1	J200 BASE SYSTEM	HPC	1.0
6	EDF	4	03/11/97	09:50	577HP	1	J200 BASE SYSTEM	HPC	1.0
8	EDF	632	03/21/97	08:42	000029	1	HARVCD1	SUN	1.0
8	EDF	631	03/21/97	08:41	000029	1	HARVCD1	SUN	1.0
8	EDF	16	03/12/97	15:06	000029	1	HARVCD1	SUN	1.0
9	EDF	129	03/14/97	13:06	CCW000	8	X3500A	SUN	1.0
10	EDF	634	03/21/97	08:53	000001	1	HARVsunMEM8	SUN	1.0
10	EDF	633	03/21/97	08:44	000001	1	HARVsunMEM8	SUN	1.0
10	EDF	135	03/17/97	08:15	000001	1	HARVsunMEM8	SUN	1.0
11	EDF	635	03/22/97	08:28	000001	2	X3500A	SUN	1.0
12	EDF	636	03/22/97	08:31	000001	2	X3500A	SUN	1.0
13	EDF	637	03/22/97	08:37	000001	2	X3500A	SUN	1.0
14	EDF	638	03/22/97	08:47	000001	2	X3500A	SUN	1.0
15	EDF	639	03/22/97	09:02	000001	2	X3500A	SUN	1.0
16	EDF	865	04/18/97	07:21	ZZK000	1	00000001	MBA	1,000.0
26	EDF	1,241	05/18/97	12:14	000027	1	004024		1.0
38	EDF	1,242	05/19/97	06:21	000027	1	004024		10.0
39	EDF	1,243	05/25/97	19:51	000001	1	SK-540		1.0
.									
.									
.									
9,991	SMC-E	11,102	09/17/99	10:13	257104	27	7738280-7-DE		3.0

Figure 4.3.4-118. Receipts by Receipt Number Report

(imtransr8)		DATE: 01/05/00		TIME:	
15:16					
ECS Development Facility		RECEIPTS BY EIN / PART		PAGE:	
1					
SITE	TRAN NUMB	EIN	NAME	DATE	QUANTITY
=====	=====	=====	=====	=====	=====
EDF	4,168			01/17/98	1.0
EDF	4,167			01/17/98	1.0
EDF	4,166			01/17/98	1.0
EDF	4,165			01/17/98	1.0
EDF	4,164			01/17/98	1.0
EDF	4,163			01/17/98	1.0
EDF	4,162			01/17/98	1.0
EDF	4,161			01/17/98	1.0
EDF	4,160			01/17/98	1.0
EDF	4,159			01/16/98	1.0
EDF	4,131			01/15/98	1.0
EDF	4,130			01/15/98	1.0
EDF	4,129			01/15/98	1.0
EDF	4,128			01/15/98	1.0
EDF	4,127			01/15/98	1.0
EDF	4,126			01/15/98	1.0
EDF	4,125			01/15/98	1.0
EDF	4,124			01/15/98	1.0
EDF	4,119			01/14/98	1.0
EDF	4,118			01/14/98	1.0
EDF	4,117			01/14/98	1.0
EDF	4,116			01/14/98	1.0
EDF	4,115			01/14/98	1.0
EDF	4,114			01/14/98	1.0
EDF	4,113			01/14/98	1.0
EDF	4,112			01/13/98	2.0
EDF	4,096			01/08/98	1.0
			.		
			.		
			.		
SMC-E	11,131	120-238		09/17/99	11.0

Figure 4.3.4-119. Receipts by EIN / Part Report

(imtransr8)		DATE: 01/05/00			TIME: 15:16	
ECS Development Facility		TRANSACTION HISTORY BY EIN			PAGE: 1	
EIN	DESCRIPTION	ARCHIVE	RELOCATE	SHIP	RECVD	TRANS
=====	=====	=====	=====	=====	=====	=====
00000000	EOSDIS Parent Record DO N	0.00	0.00	0.00	0.00	2.00
00000001	INDGO XS Graphics Worksta	0.00	7.00	11.00	0.00	2.00
00000002	19 Inch Color Monitor	0.00	1.00	8.00	0.00	2.00
00000003	Tape Drive - 1.3 GB - 4 M	4.00	1.00	10.00	0.00	4.00
00000004	3000-300 Workstation	0.00	1.00	8.00	0.00	2.00
00000006	RISC 6000 Workstation	0.00	1.00	8.00	0.00	2.00
00000007	19 Inch Color Monitor	0.00	1.00	8.00	0.00	2.00
00000008	19 Inch Color Monitor	0.00	2.00	16.00	0.00	4.00
00000010	19 Inch Color Monitor	0.00	1.00	8.00	0.00	2.00
00000013	SPARCStation 10	0.00	1.00	0.00	0.00	1.00
00000016	Tape Drive - 4 MM	0.00	1.00	8.00	0.00	2.00
00000020		1.00	0.00	0.00	0.00	0.00
00000023	3000-300 Workstation	0.00	0.00	0.00	0.00	1.00
			.			
			.			
			.			

Figure 4.3.4-120. Transaction History by EIN Report

(imtransr5)						DATE:	01/05/00	TIME:
15:17								
ECS Development Facility						TRANSACTIONS FOR SPARES		PAGE:
1								
SITE	TRAN	DATE	TIME	EIN	NAME	FROM	VENDOR	
QUANTITY	NUMB					LOCN	ID	
=====	=====	=====	=====	=====	=====	=====	=====	
EDF	832	03/29/97	17:29	00000008	ETHER	GSFC	DEC	
1.0								
EDF	829	03/29/97	08:07	00000008	IN STOCK	GSFC	DEC	
1.0								
EDF	5,532	04/22/98	17:43	00000495	ETHER	EDF	DEC	
1.0								
EDF	3,506	04/22/98	16:54	00000495	IN STOCK	EDF	TDI	
1.0								
EDF	5,632	05/20/98	14:13	C0002501	10mos17	LaR	SUN	
1.0								
EDF	4,659	05/20/98	14:11	C0002501	10mos17	LaR	SUN	
1.0								
EDF	4,659	05/20/98	14:11	C0002501	IN STOCK	EDF	SUN	
1.0								
					.			
					.			
					.			

Figure 4.3.4-121. Transaction History for Spares Report

(imtransr6)									
15:17									
ECS Development Facility									
PAGE: 1									
TRANSACTIONS FOR CONSUMABLES									
DATE: 01/05/00 TIME:									
FROM VENDOR									
EXTENDED									
SITE									
NUMB									
DATE									
TIME									
OEM PART									
NAME									
LOCN									
ID									
QUANTITY									
VALUE									
=====									
SMC-E 10,787 08/23/99 15:50 0400-30200 ANICOM 83.0									
0.00									
SMC-E 11,011 09/13/99 13:26 CHA07780 MRS 2.0									
0.00									
SMC-E 10,061 07/07/99 09:33 CHA07780 MRS 5.0									
0.00									
SMC-E 11,010 09/13/99 13:26 CHA73730 MRS 5.0									
0.00									
SMC-E 11,028 09/15/99 10:13 RW/MED-50 EDF 50.0									
0.00									
SMC-E 11,029 09/15/99 14:56 RW/MED-50 GSFC 50.0									
0.00									
SMC 5,375 05/13/99 15:06 RW/MED-50 STK 50.0									
0.00									
SMC 5,374 05/13/99 15:04 RW/MED-50 STK 50.0									
0.00									
SMC-E 12,319 10/14/99 14:30 RW/MED-50 STK 220.0									
0.00									
SMC 5,377 05/13/99 15:08 RW/MED-CLN STK 10.0									
0.00									
SMC 5,337 05/11/99 10:03 RW/MED-CLN STK 20.0									
0.00									
SMC 5,336 05/11/99 10:02 RW/MED-CLN STK 10.0									
0.00									
SMC 5,334 05/11/99 10:01 RW/MED-CLN STK 5.0									
0.00									
SMC-E 12,320 10/14/99 14:30 RW/MED-CLN STK 20.0									
0.00									
.									
.									
.									

Figure 4.3.4-122. Transaction History for Consumables Report

(mwo)

15:58

DATE: 09/18/00

TIME:

ECS Development Facility

MAINTENANCE WORK ORDER REPORT

PAGE:

1

Parent EIN:

OEM Part:

Serial Number:

Location: EDF

WORK ORDER: KENMW011

PARENT EIN: 00000011

OEM PART: A2627A

SER NO: 6342A30521

VENDOR: HPC : Hewlett Packard Corp

FAILED: 05/23/00 - 13:00

VENDOR CALLED: 05/23/00 - 13:30

COMPLETED: **/**/** - 00:00

DATE: 05/23/00

NAME: EDF-BB

OEM DESC: 715-50 PA RISC Workstation

MOD/VER: 715-50

LOCATION: EDF

NOTIFIED: 05/23/00 - 13:49

ARRIVED: **/**/** - 00:00

SEQ	COMPONENT EIN	SERIAL NO	OEM PART	MOD/VER	MFR	EVENT TYPE	CHG DATE
1	00000014	JP04050797	A2094A		HPC	FAILED	05/20/00
3	C0001550	A56102224855	A2646A		HPC	NEW	05/20/00
4	00000019	3314E62862		300X AXP	DEC	FAILED	05/20/00
5	00000110	3760102096	A1999A		HPC	FAILED	05/20/00
6	C0001464		A2816A		HPC	REPLACED	05/20/00
7	C0001465		A2816A		HPC	REPLACED	05/20/00
8	C0001459		A2816A		HPC	REPLACED	05/20/00
9	C0030003	123456789	3560Z OPT#423		HPC	NEW	05/20/00

WORK ORDER: MIKEMW040

PARENT EIN: 00000040

OEM PART: A2627A

SER NO: 6342A30520

VENDOR: HPC : Hewlett Packard Corp

FAILED: 05/23/00 - 14:10

VENDOR CALLED: **/**/** - 00:00

COMPLETED: **/**/** - 00:00

DATE: 05/23/00

NAME: TIMON

OEM DESC: 715-50 PA RISC Workstation

MOD/VER: 715-50

LOCATION: EDF

NOTIFIED: 05/23/00 - 14:10

ARRIVED: **/**/** - 00:00

SEQ	COMPONENT EIN	SERIAL NO	OEM PART	MOD/VER	MFR	EVENT TYPE	CHG DATE
1	00000100	JP04049423	A2094A		HPC	FAILED	05/20/00
2	C0001551	A56102224918	A2646A		HPC	NEW	05/20/00
3	00000111	3760102139	A1999A		HPC	FAILED	05/20/00
4	00000137	3314E67340	C1520B		HPC	FAILED	05/20/00
5	C0001535	US81109LBQ	A2084		HPC	REPLACED	05/20/00

Figure 4.3.4-123. Maintenance Work Order Report

(wohistr)
ECS Development Facility
Work Order: *

WORK ORDER HISTORY

DATE: 09/15/00 TIME: 17:08
PAGE: 1

WORK ORDER: SMC-E00052
PARENT EIN: 00012053 : PARENTREC
OEM PART: 9101834 : MS WINDOWS KEYBOARD FOR NCD

CHG DATE	EVENT TYPE	COMPONENT PART	OEM PART	OEM DESCRIPTION	SERIAL #	MOD/VER	LINE ITEM
05/17/00	FAILED	00012053	9101834	MS WINDOWS KEYBOARD FOR NCD	81180054		1
05/19/00	REPLACED	00054613	9202934	KEYBOARD	1234		2

WORK ORDER: SMC-E00055
PARENT EIN: 00001776 : 10mss01
OEM PART: A14-UBAL-9S-128DB : Ultra Server 2 w/1-167 Mhz CPU

CHG DATE	EVENT TYPE	COMPONENT PART	OEM PART	OEM DESCRIPTION	SERIAL #	MOD/VER	LINE ITEM
05/02/00	FAILED	00003690	ACI-2014-CDW-R1	4X2 SWITCH DIFFERENTIAL WIDE (RACKMOUNT)	141530		2
05/02/00	NEW	00001779	A1897A	Cabinet - 1.6 Mtr Std 19 In EIA Rack	US00064470		1

WORK ORDER: SMC-E00056
PARENT EIN: 00001738 : g0msh11
OEM PART: A3550AZ : Disk Array - HA - Model 20 SP620

CHG DATE	EVENT TYPE	COMPONENT PART	OEM PART	OEM DESCRIPTION	SERIAL #	MOD/VER	LINE ITEM
05/20/00	FAILED	C0008355	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3386323		4
05/20/00	FAILED	C0008354	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3394514		3
05/20/00	FAILED	C0008353	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3394510		1
05/20/00	NEW	C0030011	A3550AZ OPT#315	Hard Drive - 4.2 GB	4444444444444444		9
05/20/00	NEW	C0030010	A3550AZ OPT#315	Hard Drive - 4.2 GB	33333333		8
05/20/00	NEW	C0008376	A3550AZ OPT#314	4.2 GB HD (1 of 15x4.2GB)	SGS3388648		2
05/20/00	REPLACED	C0008362	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3395259		13
05/20/00	REPLACED	C0008358	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3386319		7
05/20/00	REPLACED	C0008357	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3394708		6
05/20/00	REPLACED	C0008356	A3550AZ OPT#314	4.2 GB HD (1 of 20x4.2GB)	SGS3394487		5

WORK ORDER: SMC-E00057
PARENT EIN: 00000044 : 10moh06
OEM PART: A2627A : 715-50 PA RISC Workstation

CHG DATE	EVENT TYPE	COMPONENT PART	OEM PART	OEM DESCRIPTION	SERIAL #	MOD/VER	LINE ITEM
05/19/00	REPLACED	C0001596	AT210TS	10 Base T Transceiver			12
05/20/00	FAILED	00000290	MSLC-001	HD Expansion Box	9441138834		4
05/20/00	FAILED	00000079	A1999A	CD ROM - 600 MB	3660102398		3
05/20/00	FAILED	00000071	A2049A	Monitor - 19 Inch Color	JP04050843		1
05/20/00	NEW	C0030006	A3560AZ OPT#426	Power Supply	1245315764564		8
05/20/00	NEW	C0001553	A2646A	32 MB RAM (1 of 2X32MB=64MB)	A56102224855		2
05/20/00	REPLACED	C0001596	AT210TS	10 Base T Transceiver			7
05/20/00	REPLACED	C0001595	0004025	3.5 DS-HD Floppy Diskette			6
05/20/00	REPLACED	C0001594	004024	3.5 DS-HD Floppy Diskette			5

Figure 4.3.4-124. Work Order History Report

(wostatre)
ECS Development Facility
Work Order: KENMW011

WORK ORDER STATUS
All Statuses

DATE: 09/15/00 TIME: 14:41
PAGE: 1
All Parent EINS

Work Order: KENMW011 Status: 0

Parent EIN: 00000011
Suffix:
OEM Part: A2627A
OEM Desc: 715-50 PA RISC Workstation
Location: EDF
Building: 1616
Room: 1100D3
User: 132
Name: Newell

Failed Components:

COMPONENT EIN	CHG DATE	SERIAL NUMBER	OEM PART	OEM DESCRIPTION	SEQ	PRO
00000014	05/20/00	JP04050797	A2094A	19 Inch Color Monitor	1	Y
00000019	05/20/00	3314E62862		3000-300 Workstation	4	Y
00000110	05/20/00	3760102096	A1999A	CD ROM - 600 MB	5	Y

New Components:

COMPONENT EIN	CHG DATE	SERIAL NUMBER	OEM PART	OEM DESCRIPTION	SEQ	PRO
C0001550	05/20/00	A56102224855	A2646A	32 MB RAM (1 of 2X32MB=64MB)	3	Y
C0030003	05/20/00	123456789	3560Z OPT#423	POWER SUPPLY	9	Y

Components Replaced:

COMPONENT EIN	CHG DATE	SERIAL NUMBER	OEM PART	OEM DESCRIPTION	SEQ	PRO
C0001459	05/20/00		A2816A	8 MB RAM Chip (SIMM)	8	Y
C0001464	05/20/00		A2816A	8 MB RAM Chip (SIMM)	6	Y
C0001465	05/20/00		A2816A	8 MB RAM Chip (SIMM)	7	Y

Figure 4.3.4-125. Work Order Status Report

(listatyr)		LICENSE ENTITLEMENTS STATUS										DATE: 09/15/00		TIME: 11:03	
ECS Development Facility														PAGE: 1	
*** AutoExpert ***															
LIC TYPE	EIN	CRM DESC	VENDOR	PURCHASE ORDER	MAINT CONTRACT	WARR DT	USER RTU	URTU REM	URTU MNT	NODE RTU	NRTU REM	NRTU MNT	U	N	M
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
NODELOCK	C0147812	AutoExpert - High Availability Server Op	PLT	CCM0002190	CCM2190	12/31/00	0	0	0	20	19	20			
NodeLock	C0147812	AutoExpert - High Availability Server Op	PLT	CCM0002190	CCM2190	12/31/00	0	0	0	20	20	20			
*** Clearcase ***															
LIC TYPE	EIN	CRM DESC	VENDOR	PURCHASE ORDER	MAINT CONTRACT	WARR DT	USER RTU	URTU REM	URTU MNT	NODE RTU	NRTU REM	NRTU MNT	U	N	M
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	C0000289	Clearcase Licenses				07/21/01	0	0	0	0	0	0			
FLOATING	C0143038	Clearcase Licenses	ASC	CCM0004581		10/31/02	20	3	17	10	10	0			
FLOATING	C0146938	Clearcase Licenses	ASC	CCM0001631	CCM631	10/31/02	180	0	180	0	0	0			
FLOATING	C0147677	Clearcase Licenses	ASC	CCM0004528	CCM4528	10/31/02	100	100	100	0	0	0			
.															
.															
.															

Figure 4.3.4-126. License Entitlements Status Report

(licallpr)
ECS Development Facility

LICENSE ALLOCATIONS BY PRODUCT

DATE: 09/15/00 TIME: 11:04
PAGE: 1

*** AUTO EXPERT ***

Versions: 3.4

Features: P

LICENSE	SEQ	HOST NAME	HOST ID	LICENSE KEY	EXP DATE	PLATFORMS	USER RTU	START DT	END DATE
L0000001	1	p0sps06	808041c1	ECONTLPGQIQIOHS	10/31/02	ALL	0	05/11/00	12/31/00
-- Addl Host:	1		asdfasdf	ECONTLPGQIQIOHS	10/31/02	ALL	0		
L0000010	1	p0sps06	808041c1	ECONTLPGQIQOHS	10/31/02	ALL	0	05/11/00	05/22/00
-- Addl Host:	1	p0sps06	808041c1	ECONTLPGQIQOHS	10/31/02	ALL	0		
-- Addl Host:	3	t1sps02	8081e393	ECONTLPGQIQOHS	10/31/02	ALL	0		

*** CLEARCASE ***

Versions: 2.1

Features:

LICENSE	SEQ	HOST NAME	HOST ID	LICENSE KEY	EXP DATE	PLATFORMS	USER RTU	START DT	END DATE
CC000001	1	KRYPTON	7279D995	387D27CA.C9AE6FEA.02	10/31/02	ALL	205	05/11/00	10/31/02
L0000002	1	KRYPTON	7279d995	387d27ca.c9ae6fea.02	10/31/02	ALL	205	05/11/00	10/31/02
L0000012	1	KRYPTON	7279d995	387d27ca.c9ae6fea.02	10/31/02	ALL	205	05/11/00	10/31/02

*** Clearcase ***

Versions:

Features:

LICENSE	SEQ	HOST NAME	HOST ID	LICENSE KEY	EXP DATE	PLATFORMS	USER RTU	START DT	END DATE
TRANGLIC11	1	t1sps02	8081e393	df2d1sf532f1g5	**/**/**		0	**/**/**	**/**/**
TRANGLIC10	1	KRYPTON		6542DS1F5FDG215	**/**/**	ALL	0	05/11/00	10/31/02
TRANGLIC10	2	JLKJFPDG		6542DS1F5FDG215	**/**/**	ALL	0	05/11/00	10/31/02
TRANGLIC10	3	HKJHDF		6542DS1F5FDG215	**/**/**	ALL	0	05/11/00	10/31/02
TRANGLIC2	1	KRYPTON	7279d995	387d27ca93121422121	10/31/02	ALL	205	05/11/00	10/31/02
TRANGLIC6	1	KRYPTON	7279d995	37521D24DRE512	10/31/02	ALL	205	05/17/00	**/**/**
TRANGLIC6	2	t1sps01	745c542d	37521D24DRE512	10/31/02	ALL	0	**/**/**	**/**/**
TRANGLIC8	1	KRYPTON	7279d995	32872d54af45421	**/**/**	ALL	205	**/**/**	**/**/**

Figure 4.3.4-127. License Allocations by Product Report

(lcallhr)
ECS Development Facility

LICENSE ALLOCATIONS BY HOST

DATE: 09/15/00
TIME: 11:04
PAGE: 1

*** JASON ***

EIN: 00001438
DESC: SPARCStation 20-712

EIN HOSTID:

EIN STATUS: I

MFR: SUN

MODEL: 20-712

SERIAL NUMBER: 547F0DB2

LICENSE

SEQ

ECS ALIAS

VERSION

PLATFORMS

LICENSE KEY

EXP DATE

USER RTU

START DT

END DATE

TRANGLIC10

2

Clearcase

2.1

ALL

6542DS1F5FDG215

//**

0

05/11/00

10/31/02

*** KRYPTON ***

EIN: 00001438
DESC: SPARCStation 20-712

EIN HOSTID:

EIN STATUS: I

MFR: SUN

MODEL: 20-712

SERIAL NUMBER: 547F0DB2

LICENSE

SEQ

ECS ALIAS

VERSION

PLATFORMS

LICENSE KEY

EXP DATE

USER RTU

START DT

END DATE

CC000001

1

CLEARCASE

2.1

ALL

387D27CA.C9AB6FEA.02

10/31/02

205

05/11/00

10/31/02

L0000002

1

CLEARCASE

2.1

ALL

387d27ca.c9ae6fea.02

10/31/02

205

05/11/00

10/31/02

*** KRYPTON ***

EIN: 00001438
DESC: SPARCStation 20-712

EIN HOSTID:

EIN STATUS: I

MFR: SUN

MODEL: 20-712

SERIAL NUMBER: 547F0DB2

LICENSE

SEQ

ECS ALIAS

VERSION

PLATFORMS

LICENSE KEY

EXP DATE

USER RTU

START DT

END DATE

TRANGLIC10

1

Clearcase

2.1

ALL

6542DS1F5FDG215

//**

0

05/11/00

10/31/02

L0000012

1

CLEARCASE

2.1

ALL

387d27ca.c9ae6fea.02

10/31/02

205

05/11/00

10/31/02

TRANGLIC2

1

Clearcase

2.1

ALL

387d27ca93121422121

10/31/02

205

05/11/00

10/31/02

TRANGLIC5

2

AutoExpert

3.4

ALL

JLKJDLKJ6542D

10/31/02

0

//**

//**

TRANGLIC8

1

Clearcase

2.1

ALL

32872d54af45421

//**

205

//**

//**

TRANGLIC9

1

AutoExpert

3.4

ALL

F54DFG21F8FD1G

//**

0

//**

05/20/00

translic4

1

AutoExpert

3.2

SUN

789456123.0

10/31/02

0

06/20/00

10/31/02

-- Addl Host:

1

ncd25

*** KRYTON ***

EIN: 00001438
DESC: SPARCStation 20-712

EIN HOSTID:

EIN STATUS: I

MFR: SUN

MODEL: 20-712

SERIAL NUMBER: 547F0DB2

LICENSE

SEQ

ECS ALIAS

VERSION

PLATFORMS

LICENSE KEY

EXP DATE

USER RTU

START DT

END DATE

TRANGLIC6

1

Clearcase

2.1

ALL

37521D24DRE512

10/31/02

205

05/17/00

//**

*** p0sps06 ***

EIN: 00001438
DESC: SPARCStation 20-712

EIN HOSTID:

EIN STATUS: I

MFR: SUN

MODEL: 20-712

SERIAL NUMBER: 547F0DB2

LICENSE

SEQ

ECS ALIAS

VERSION

PLATFORMS

LICENSE KEY

EXP DATE

USER RTU

START DT

END DATE

L0000001

1

AUTO EXPERT

3.4

ALL

ECONTLPGQIQOHS

10/31/02

0

05/11/00

12/31/00

-- Addl Host:

1

AUTO EXPERT

3.4

ALL

ECONTLPGQIQOHS

10/31/02

0

05/11/00

05/22/00

-- Addl Host:

4

-- Addl Host:

5

Figure 4.3.4-128. License Allocations by Host Report

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4.3.5 Tivoli/Courier

Tivoli/Courier (T/Courier), a COTS product, is based on the Tivoli Management Platform (TMP), an architecture and a set of tools for managing client/server systems. More information can be found on Tivoli in Section 4.2.2 and Tivoli Enterprise Console and Tivoli Administration in Section 4.4.6. T/Courier adds software distribution capability to the Tivoli management environment and thus enables the operations staffs at the SMC and the DAAC sites to distribute ECS software, database information, and software documentation as well as commercial software across a multi-platform ECS network. T/Courier provides a centralized software distribution capability to add new software, update existing software with newer versions, and synchronize software on distributed systems.

Tivoli and T/Courier must be installed on all host platforms that will be involved in the distribution. Once installed, T/Courier enables the creation and distribution of profiles (file packages) from one UNIX host to another host or hosts. The file package defines the source path of the files and/or directories to be distributed, defines the destination path of the files and/or directories being distributed, and contains specific instructions on how to set up the files on the receiving platform. T/Courier can distribute a file package to a single host platform or to multiple host platforms concurrently. The distribution can be set up to occur immediately or at some scheduled time.

T/Courier has a graphical user interface (GUI) and a command line interface (CLI). The GUI provides basic software distribution capability through a set of screens. The CLI provides basic distribution capability and other capability (for more advanced users) through a set of T/Courier commands. The GUI capability is described in this section. Refer to the T/Courier User's Guide and Reference manuals for information on the CLI capability.

The most frequently used software distribution functions are listed in Table 4.3.5-1.

Table 4.3.5-1. Common ECS Operator Functions Performed with T/Courier

Operating Function	Command/Script or GUI	Description	When and Why to Use
Create file package	Series of GUIs	Create a definition of a package that points to specific files for distribution	Use when there is a new set of files to be distributed or when updates need to be distributed.
Preview file package	GUI	Preview the contents of a file package	Use to check the listing of files and/or directories that are about to be distributed.
Distribute file package	GUI	Distribute software files.	Use to distribute software to specified hosts.
Schedule distribution	GUI	Schedule distribution of files.	Use to initiate distribution activity and cause it to occur at some predetermined date and time.
Remove file package	GUI	Remove file package from hosts.	Use to remove distributed file packages from the hosts that received them.

4.3.5.1 Quick Start Using Tivoli/Courier

The underlying assumptions are that:

- Tivoli and T/Courier have been installed on all of the platforms that will be involved in the distribution
- The user has been granted administrator privileges for T/Courier activity.
- Location of the files to be distributed should be known in advance of executing Courier.
- The files' location will be entered into one of the Courier screens.
- Tivoli/Courier can only be accessed through Tivoli.

The documentation of Tivoli Courier used as a basis and referenced in this section is for version/release 3.0.1, contained in ECS Release 4.

To initiate T/Courier via Tivoli, log into a Unix platform that has T/Courier installed and enters the following commands:

```
source /etc/Tivoli/setup_env.csh (in c shell)
. /etc/Tivoli/setup_env.sh (in Bourne or bash shell)
tivoli -font fixed
```

4.3.5.2 Tivoli/Courier Main Screen

Upon execution, Tivoli will splash its logo screen and then display its Main Screen as shown in Figure 4.3.5-1. This screen provides access to software distribution functions through a series of icons and dialogs. The top part of the screen holds the icons needed to get things started and the bottom part displays the type of process and results of the process that is initiated.

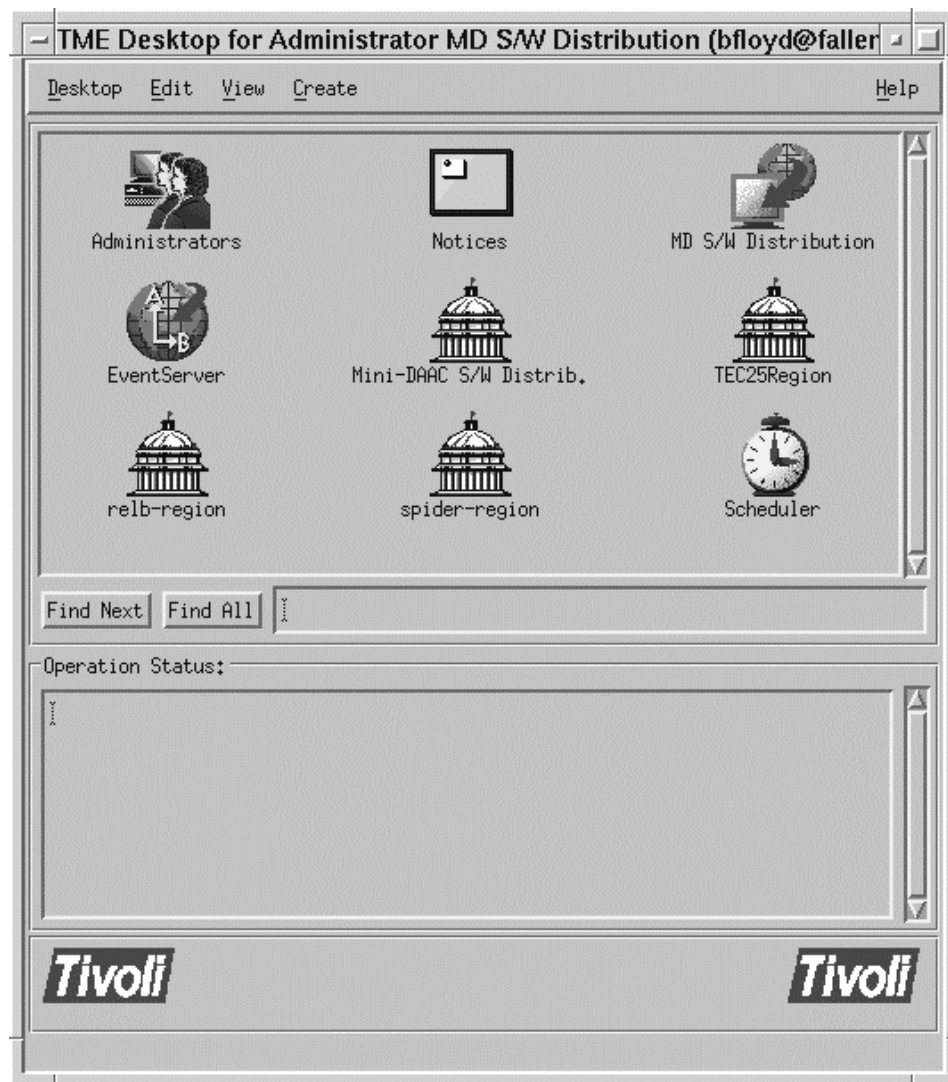


Figure 4.3.5-1. T/Courier Main Screen

4.3.5.2.1 Establish Policy Region

Before using T/Courier to distribute software, system resources must be identified and organized for distribution activity. T/Courier uses policy regions to enable organization of software distribution activity. A policy region is a collection of resources that share one or more common policies and it must be created before any distribution can occur.

Create a policy region by clicking the “Create “ menu on the T/Courier Create Events Pop-up (see Figure 4.3.5-2) and select “Region.” Upon selection of the “Region” option, a Create Policy Region pop-up will appear as shown in Figure 4.3.5-3. Enter a descriptive name for the region that you’re about to create and then click the **“Create and Close”** button.

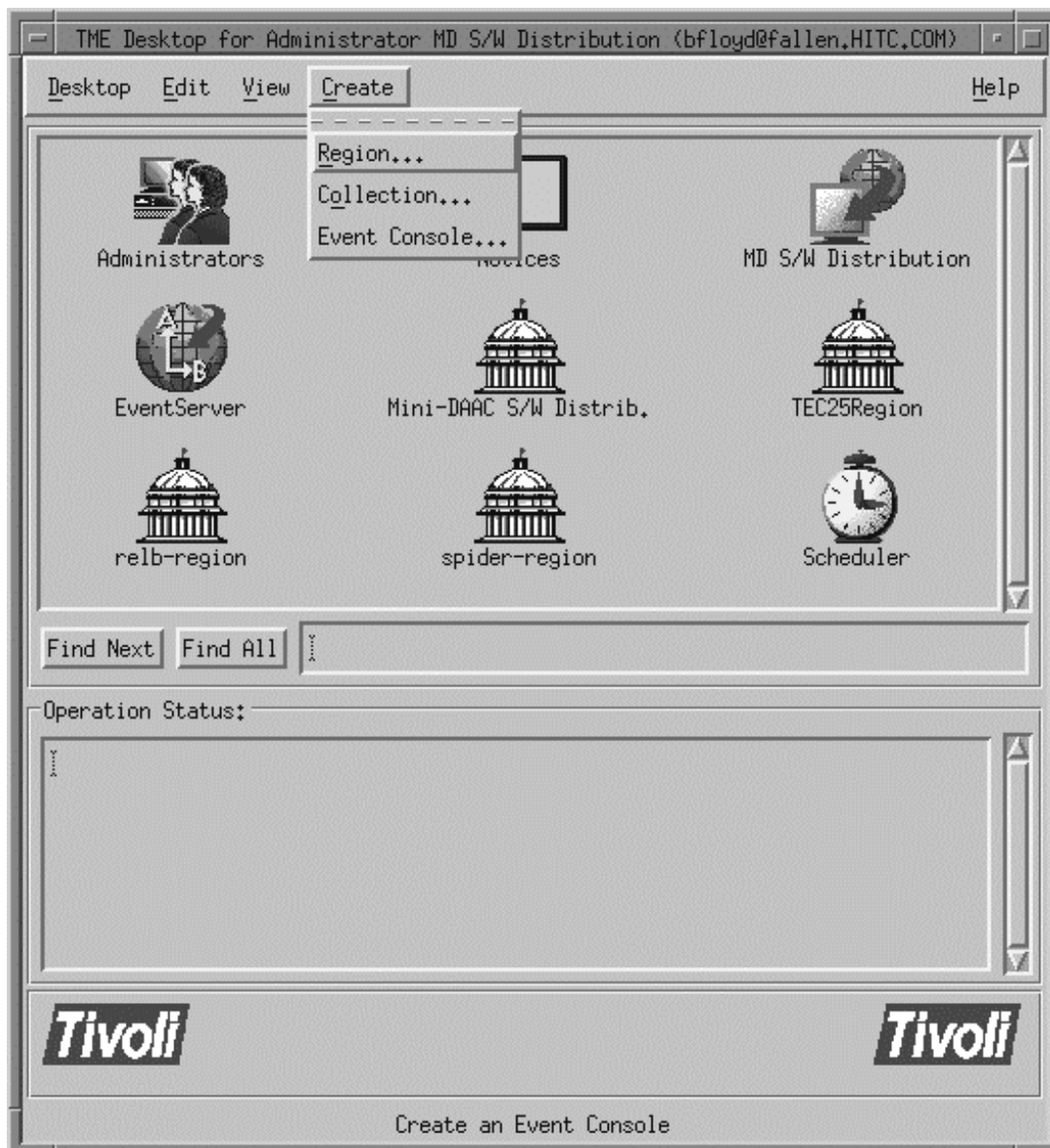


Figure 4.3.5-2. T/Courier Create Events Pop-up

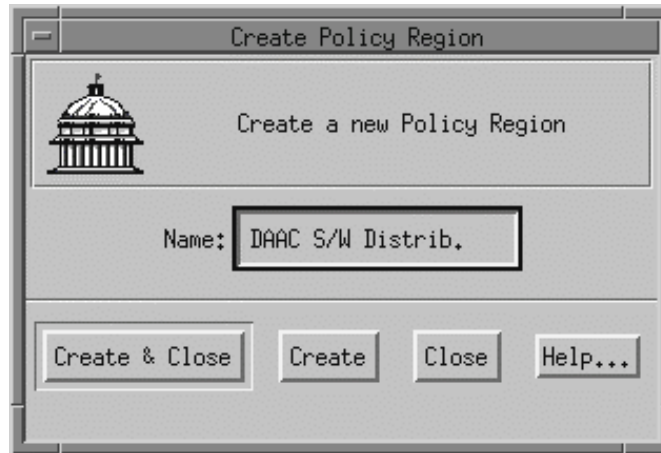


Figure 4.3.5-3. T/Courier Create Policy Region Pop-up

At this point a new policy region (for example, DAAC S/W Distrib.) has been created. This new icon appears on the T/Courier Main Screen, and the status part of the T/Courier main screen reflects the status of the “Create Policy Region” action as shown in Figure 4.3.5-4

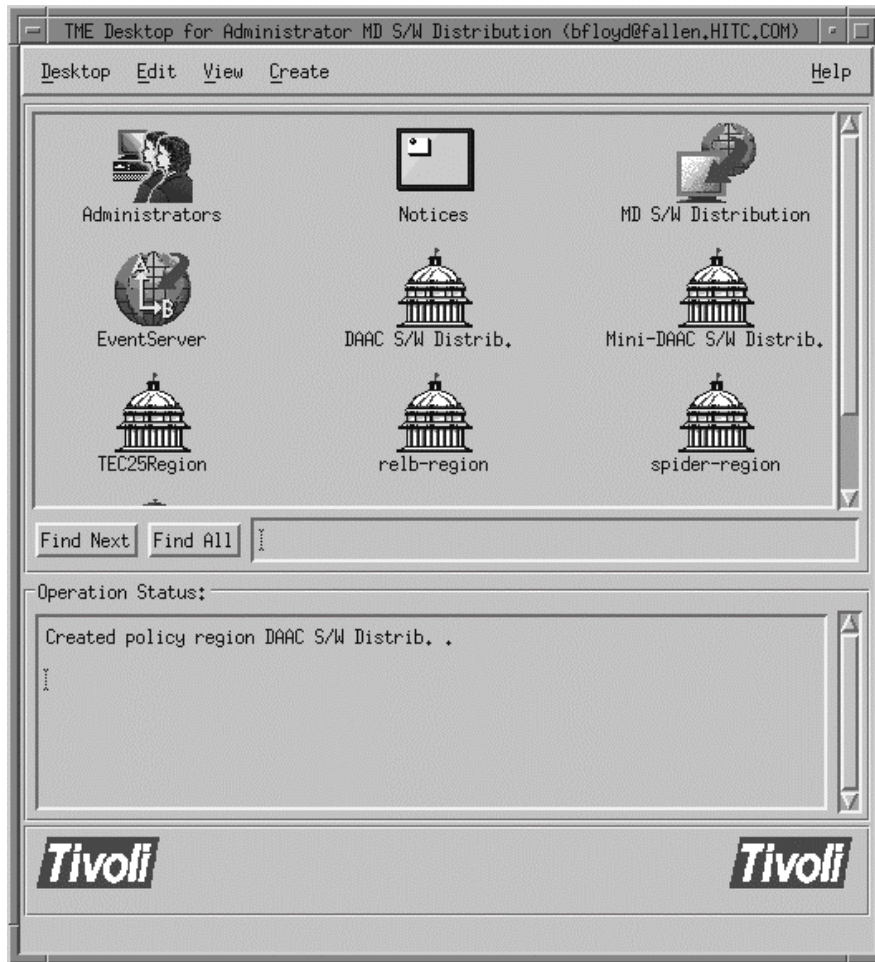


Figure 4.3.5-4. T/Courier Operation Status display, Main Screen

4.3.5.2.2 Select Managed Resources

Once established, a policy region has to be defined in terms of the resources that it will manage. Double click the new policy region's icon to bring up the first of several screens that has to be completed. The Policy Region pop-up is displayed as shown in Figure 4.3.5-5. Click the "Properties" menu and then select the "Managed Resources " option. This causes

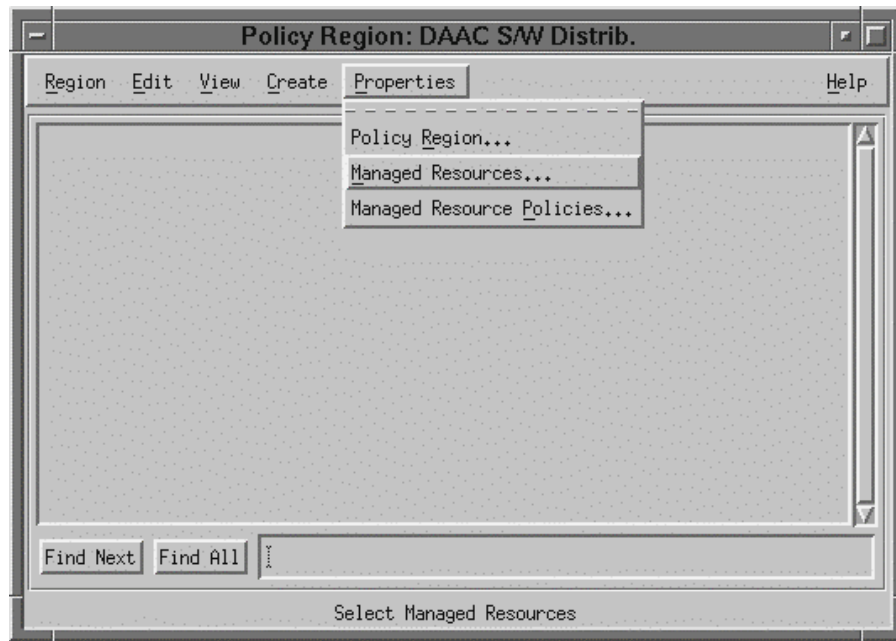


Figure 4.3.5-5. T/Courier Properties Menu of Policy Region Pop-up

the “Set Managed Resources” Pop-up to appear as shown in Figure 4.3.5-6. The Set Managed Resources” pop-up enables the selection of resources to be managed. For software distribution activity, FilePackage and ProfileManager are the resources to select and move from the Available Resources side to the Current Resources side of the “Set Managed Resources” Pop-up. Click the **“Set and Close”** button to save the selections.

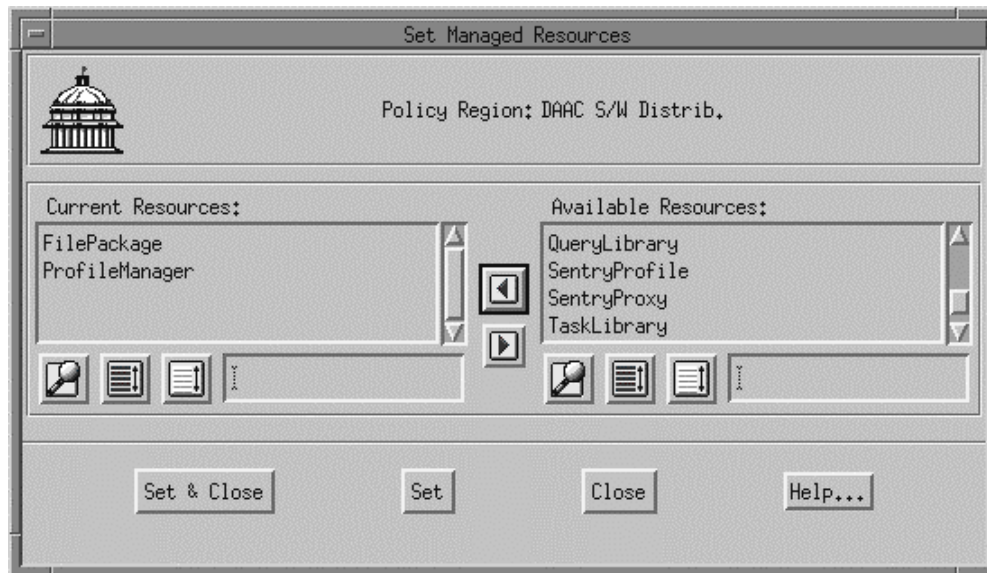


Figure 4.3.5-6. T/Courier Set Managed Resources Pop-up

4.3.5.2.3 Create Profile Manager

A policy region is made up of profile managers. A profile manager contains one or more profiles. A profile is also called a file package and it describes the location, path and other characteristics of the files to be distributed. To set up a profile manager, click the “Create” menu on the Policy Region pop-up as shown in Figure 4.3.5-7. Then select the ProfileManager option.

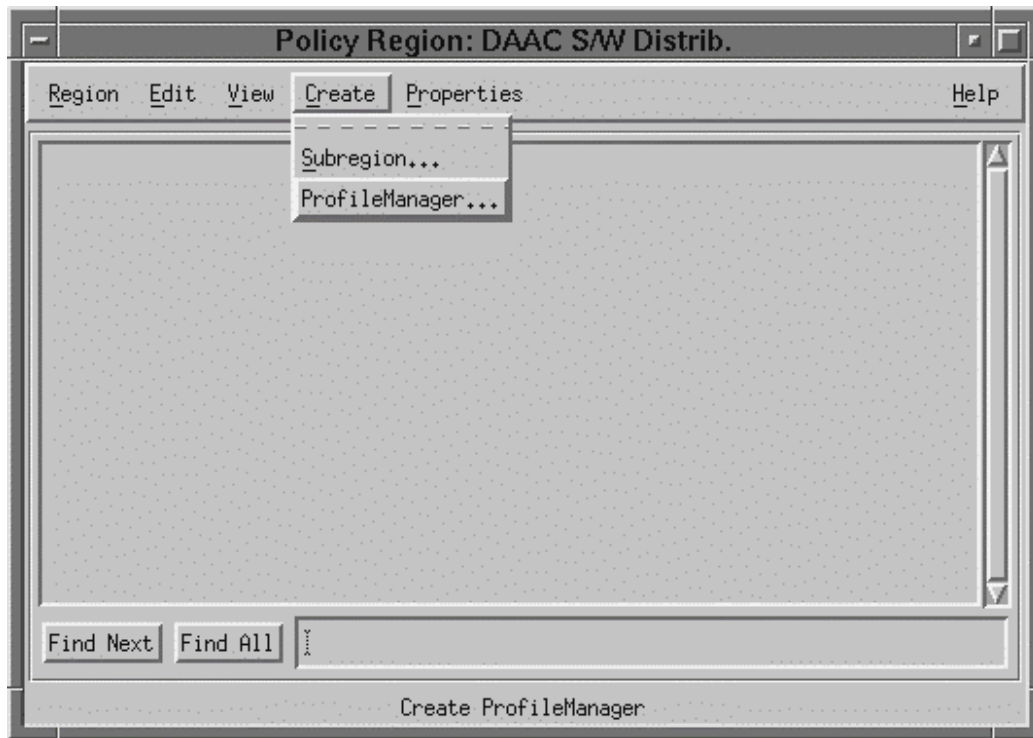


Figure 4.3.5-7. T/Courier Create Menu of Policy Region Pop-up

Selection of the ProfileManager option causes the “Create Profile Manager” Pop-up to appear. See Figure 4.3.5-8. Enter a descriptive name for the profile manager being created. Suggest that the profile manager’s name be indicative of the type of profiles that it will contain. A discernible profile manager name will enable one to ascertain the type of profiles the manager holds. This will be particularly useful when other profile managers are added to the region as it will preclude your having to go into a profile manager to determine what profiles (file packages) it controls. Click the **“Create & Close”** button to save your entry.



Figure 4.3.5-8. T/Courier Create Profile Manager Pop-up

The Policy Region pop-up will now display an icon for the newly created profile manager as shown in Figure 4.3.5-9 below.

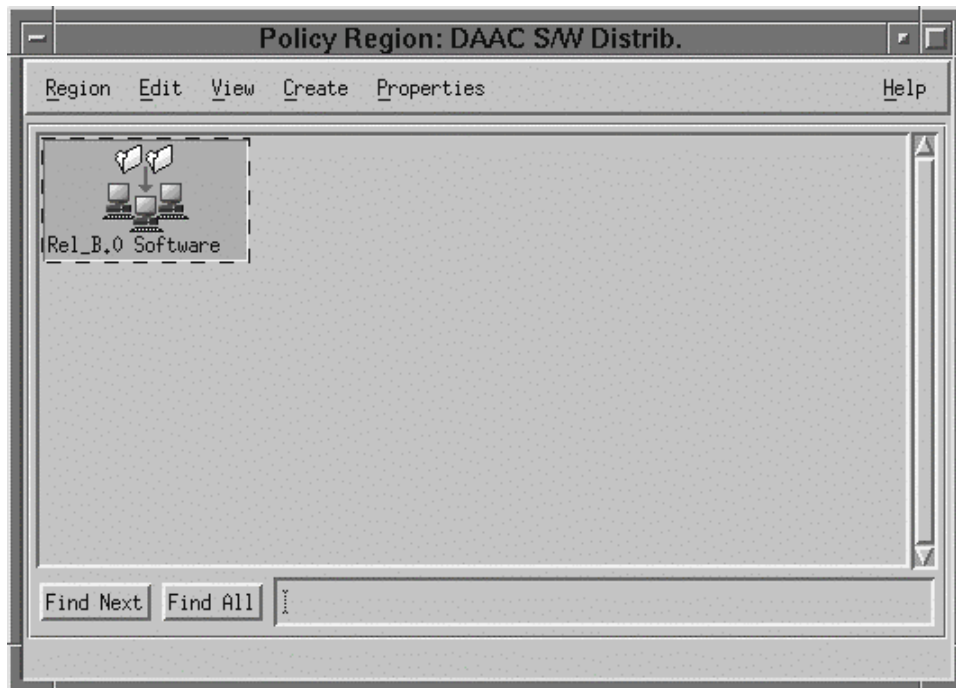


Figure 4.3.5-9. T/Courier Create Profile Manager Pop-up (showing new icon)

4.3.5.2.4 Create Profile

A profile or file package must be created for the Profile Manager to manage. A profile is a description of a set of files that will be distributed to the subscribing platforms. Double click the newly created profile manager's icon to bring up the Profile Manager (Rel_B0_Software) pop-up. Click the "Create" menu on the Profile Manager Screen and then select the "Profile" option as shown in Figure 4.3.5-10.

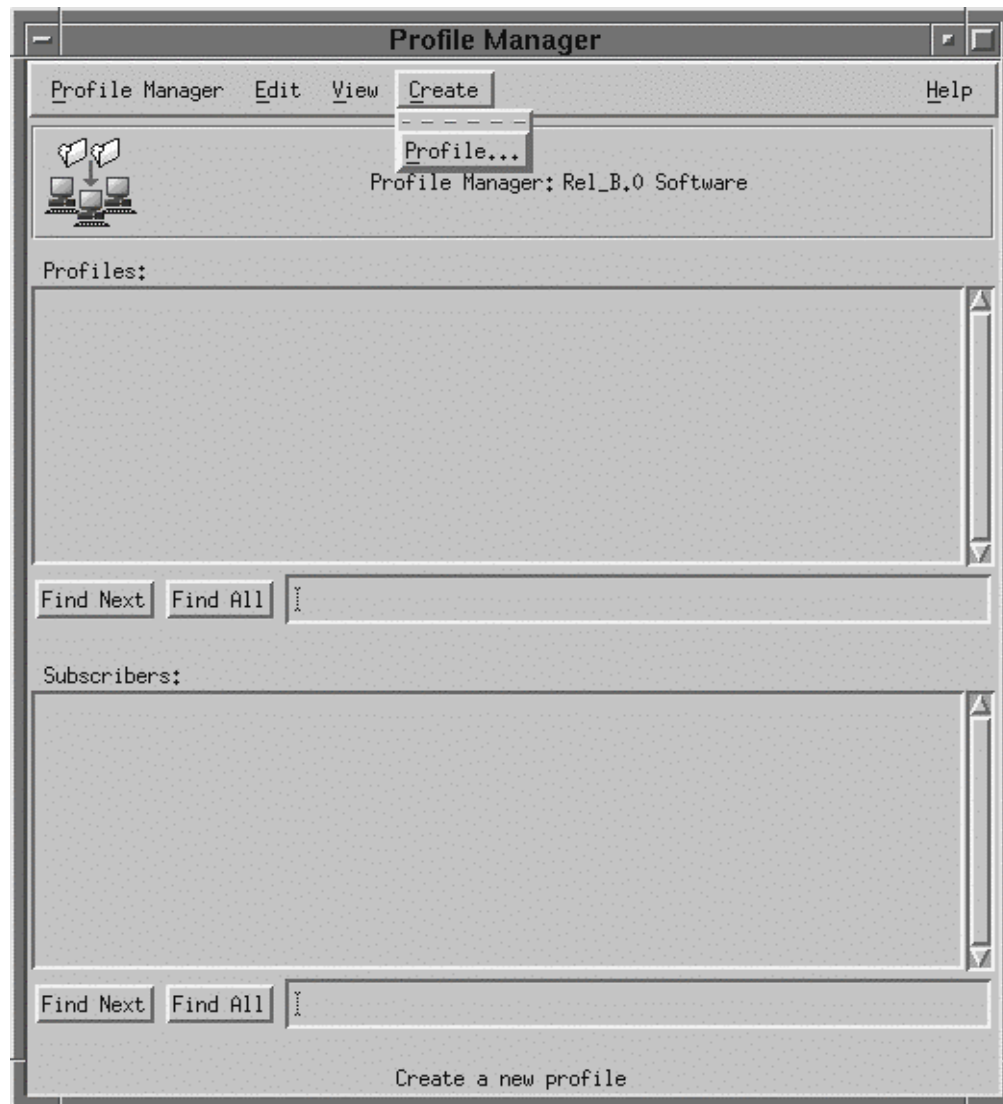


Figure 4.3.5-10. T/Courier Create Menu of Profile Manager Pop-up

A "Create Profile" Pop-up is displayed as shown in Figure 4.3.5-11. Enter a descriptive name in the "Name/Icon Label" text box.



Figure 4.3.5-11. T/Courier Create Profile Pop-up

It is recommended that the chosen name be indicative of the type or category of software files that will be in the profile (file package). Click the **“Create & Close”** button to store your entry and then go back to the Profile Manager pop-up. The Profile Manager now has one profile as shown in Figure 4.3.5-12.

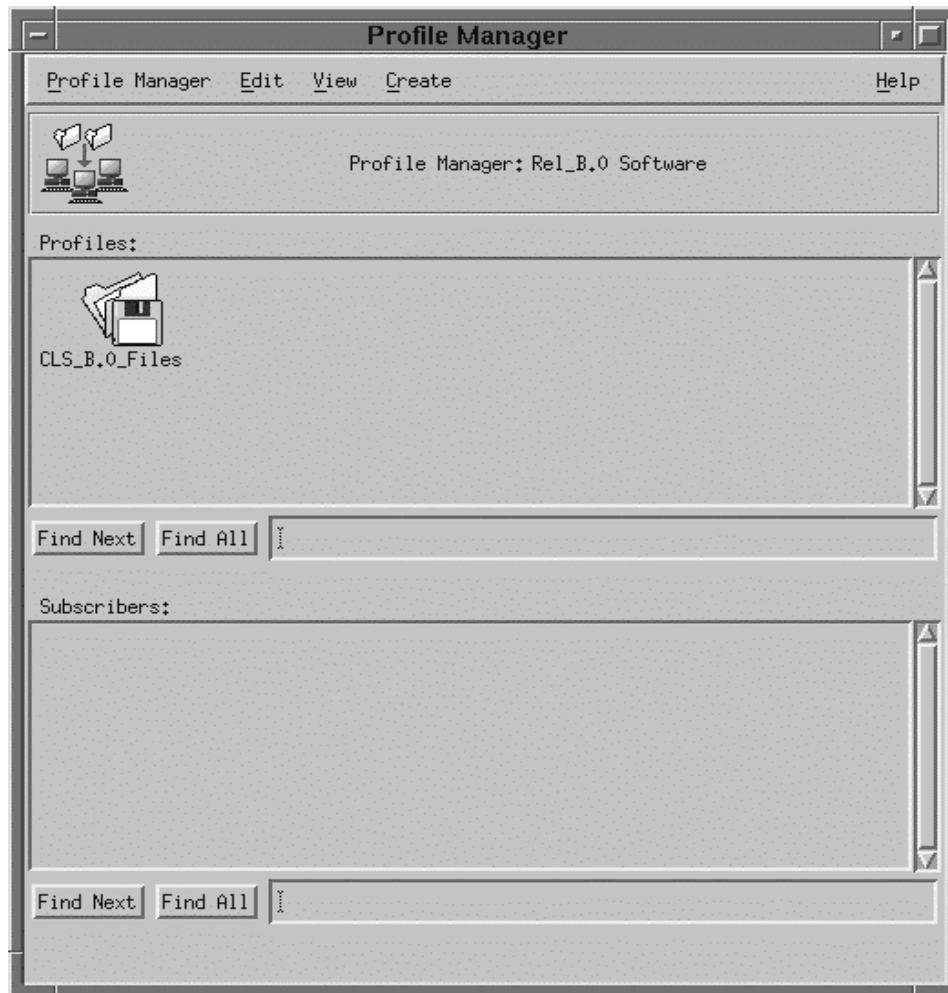


Figure 4.3.5-12. T/Courier Profile display of Profile Manager Pop-up

4.3.5.2.5 Define Profile

The newly created profile (file package) has to be defined. Double click the newly created profile's icon to initiate the definition process. The File Package Properties pop-up is then displayed as shown in Figure 4.3.5-13. Enter the name of the source host, host where a copy of the files to be distributed will reside, in the Source Host box. Enter the path (s) to the source files in the Directories & Files box.

For General Options, select "Stop distribution on error" option and the "Descend into directories" option (Note, selection of the "Descend into directories" option will caused the sub-directories of the listed directories to be distributed as well. If the "Descend" option is not selected, only the top level of the specified directory will be distributed; its sub-directories (if any) will not be distributed).

For File Mode at Destinations Option, select Preserve mode of source files. However, if you need to change the mode of the files at the destination, select the “Change mode of” line and then enter the new mode.

For Log Information Options, select “Send to Courier notice group” and “Send to log file on” option. Enter the name of the host that will hold the log file and the path to the log file.

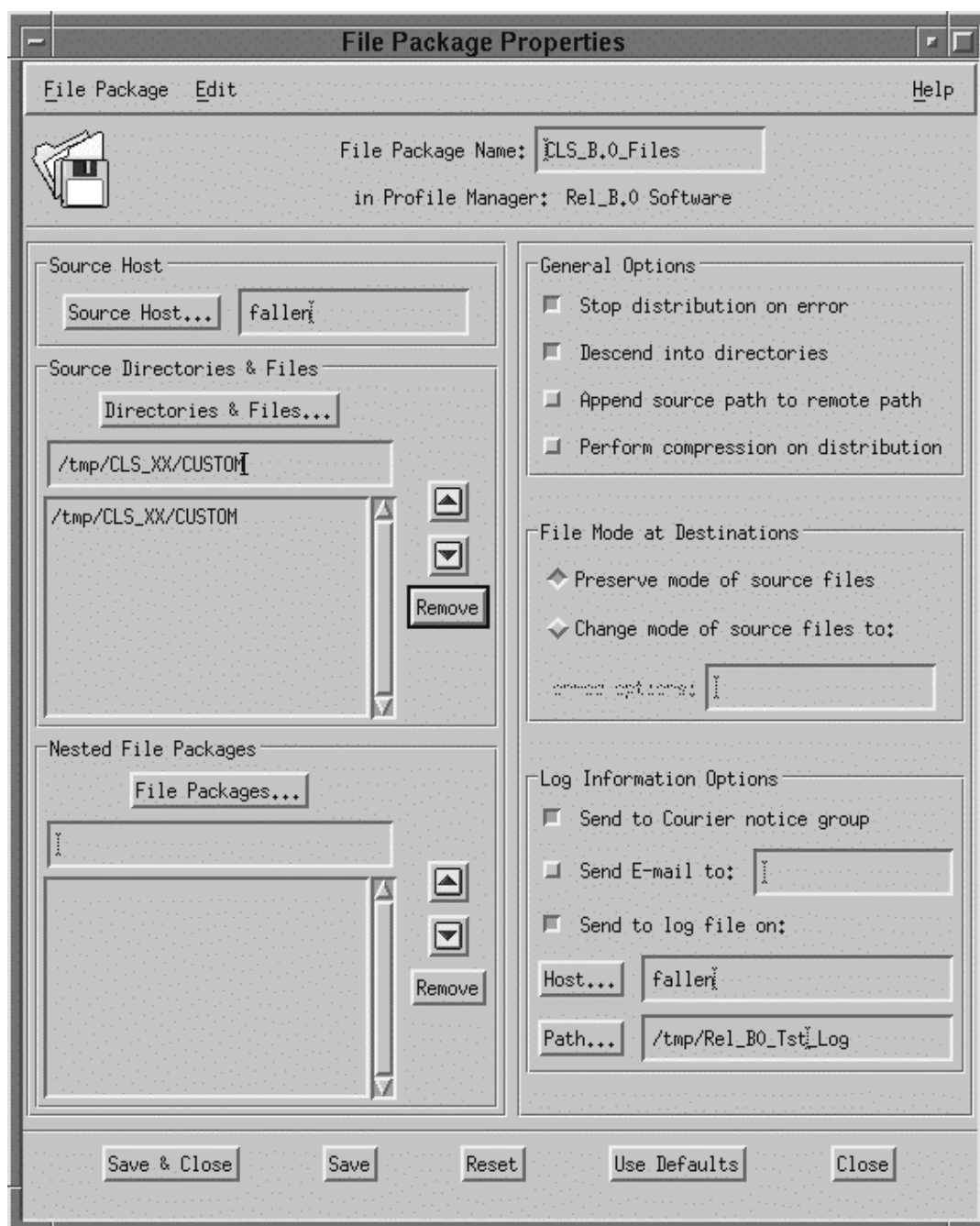


Figure 4.3.5-13. T/Courier File Package Properties Pop-up

[Note, always establish a log file. T/Courier will send a detailed status message to an identified log file. Otherwise, only a brief error message and the brief message sent to the Operation Status box on the main screen are provided and there is usually insufficient information to determine the cause of a problem in the Operations Status Box. Note also that the T/Courier default for writing messages to a log file is to overwrite the contents of the log file each time an entry is made to the log. This default can be changed so that messages are appended to the log file each time an entry is made. The Tivoli Courier User's Manual explains how to change the log file default and also provides a detailed description of the other settings and options.]

This completes the necessary entries for the File Package Properties pop-up.

4.3.5.2.6 Establish UNIX Options

T/Courier can distribute software files to platforms having different operating systems. Therefore, certain T/Courier options are operating system specific. Since ECS platforms are Unix platforms, this section will cover the use of the File Package Unix Option Screen. Refer to the T/Courier User's Manual for the use of other operating systems options screens. To set up the File Package Unix Options Screen, first click the Edit menu on the File Package Properties pop-up. Select the Platform-Specific Options and then the UNIX Options as shown in Figure 4.3.5-14. The File Package UNIX Options pop-up is then displayed as shown in Figure 4.3.5-15.

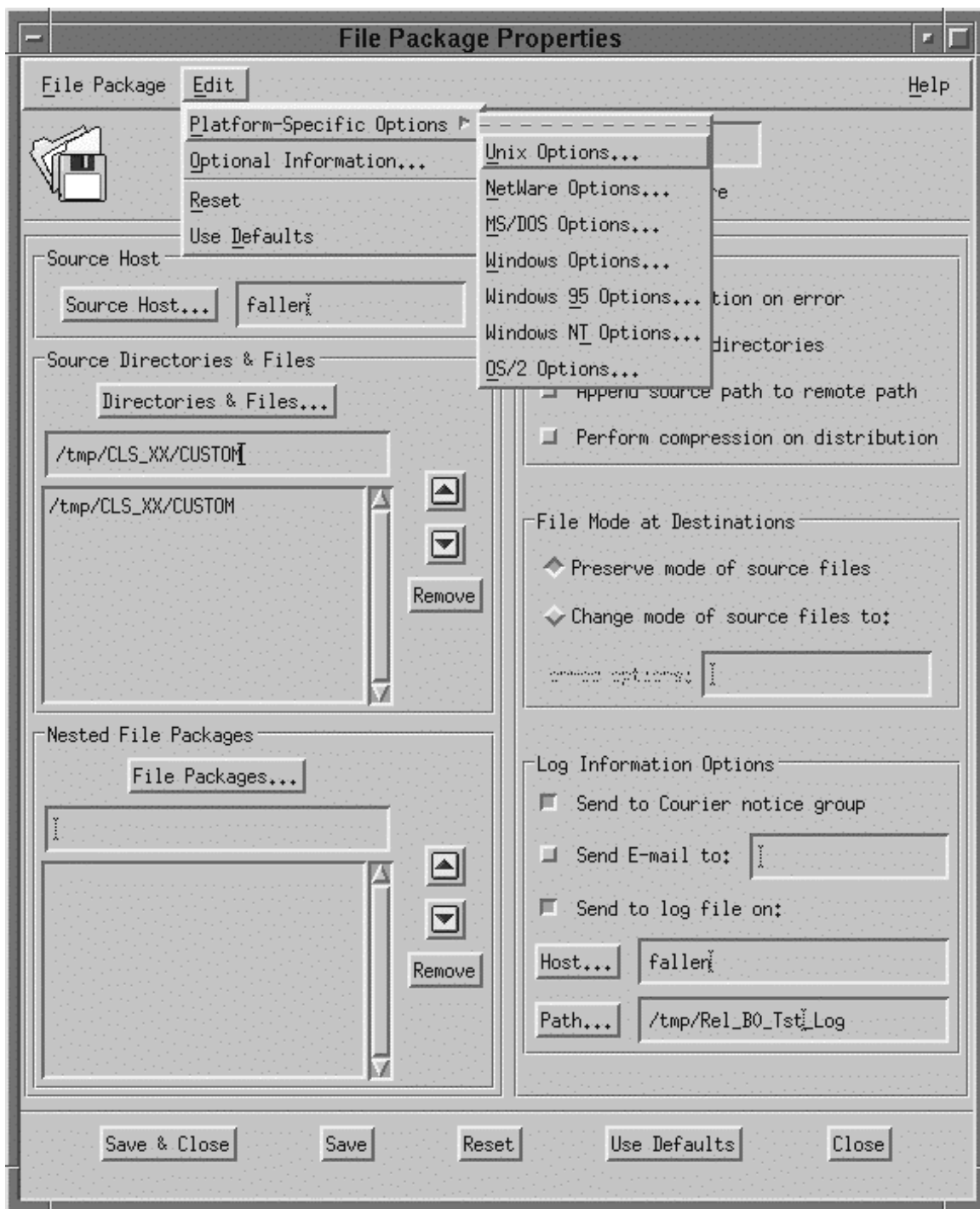


Figure 4.3.5-14. T/Courier Edit Menu of File Package Properties Pop-up

On the File Package UNIX Options pop-up, enter the path in the Destination Directory Path box where the files are to be placed on the destination (receiving) host.

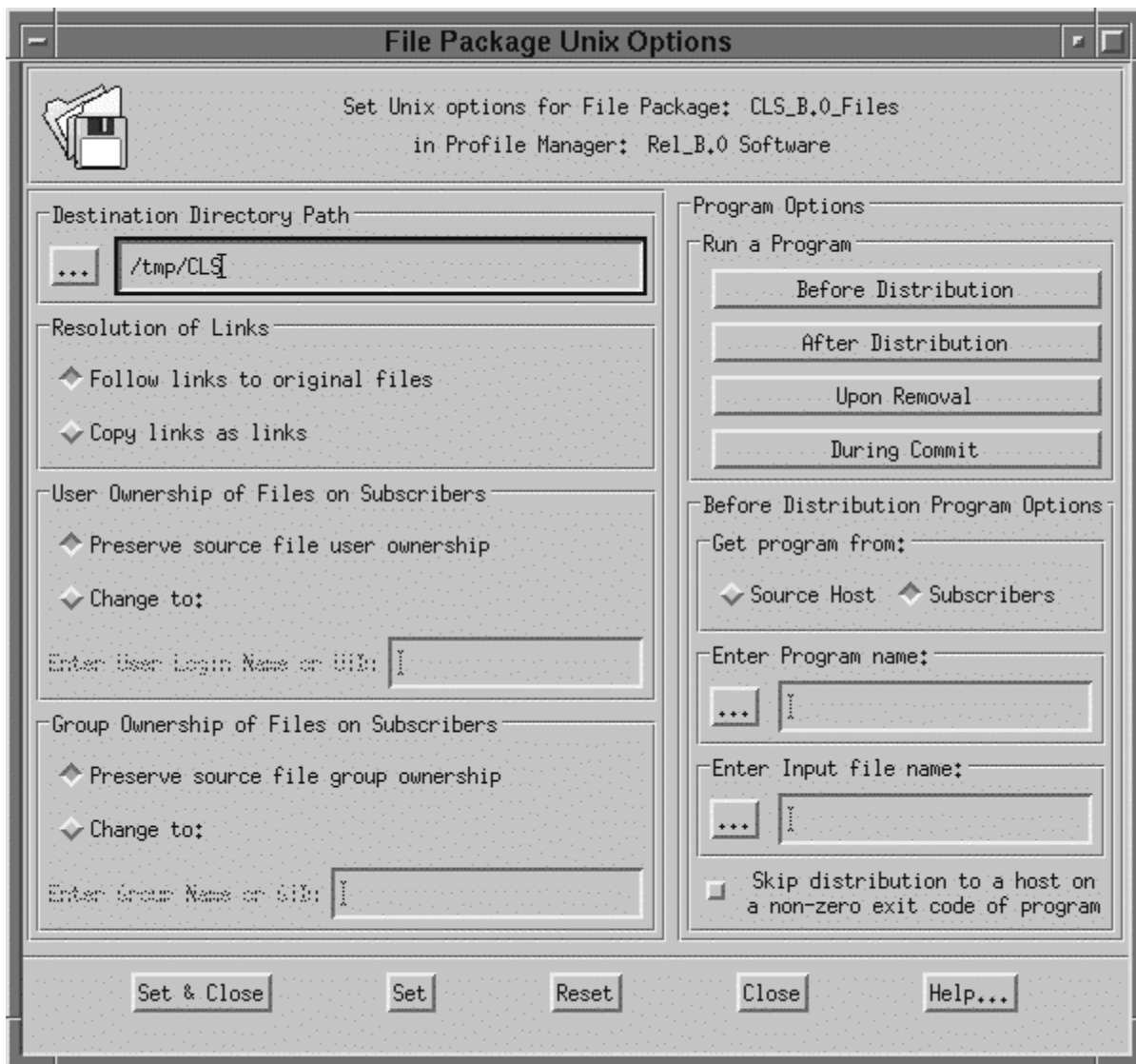


Figure 4.3.5-15. T/Courier File Package UNIX Options Pop-up

Note of caution: Make sure that the Destination Directory Path being entered is correct. T/Courier operates at the root level. If the specified directory/files names already exist on the destination platform, T/Courier will overwrite them. If the destination directory path does not exist on the destination platform, T/Courier will create the path and then install the files.

Allow the default selections (Follow links to original files; Preserve source file user ownership; and “Preserve source file group ownership”) to stand or select options desired.

The “Program Options” enables an advanced T/Courier user to execute programs or UNIX scripts at some point during the distribution process. Refer to the T/Courier User’s Manual for use of the

“Program Options.” Click the “Set & Close” button to store your entries and selections. On the File Package Properties pop-up, click the “Save and Close” button.

This concludes the definition of the file package.

4.3.5.2.7 Preview Profile

To preview an existing profile (file package) double click the desired profile’s icon on the Profile Manager Screen (see Figure 4.3.5-12). The File Package Properties pop-up (see Figure 4.3.5-13) is then displayed. This screen describes the software distribution rules at the source (e.g. the name of the source host, the path (s) to the source files, the General Options, the File Mode at Destinations option, and Log Information Options). If you change any of these options, click the "Save" button to store the change.

The software distribution rules for the destination (receiving) sites are described on the File Package Unix Options Screen. First click the Edit menu on the File Package Properties pop-up (see Figure 4.3.5-14). Select the Platform-Specific Options and then the UNIX Options. The File Package Unix Options screen (see Figure 4.3.5-15) is displayed and shows the file package options for the receiving site. If you change any of the options, click the "Set and Close" button to store the change. T/Courier brings you back to the File Package Properties screen. Click the "Save and Close" button to store all changes. If no changes were made, just click the "Close" button. T/Courier brings you back to the Profile Manager Screen.

4.3.5.2.8 Select Subscribers

Subscribers (hosts) that will receive the profile, must be identified for the profile manager. On the Profile Manager pop-up, click the Profile Manager menu and select the “Subscriber” option (as shown in Figure 4.3.5-16) to identify subscribers for the profile manager, “Rel_B.0 Software.”

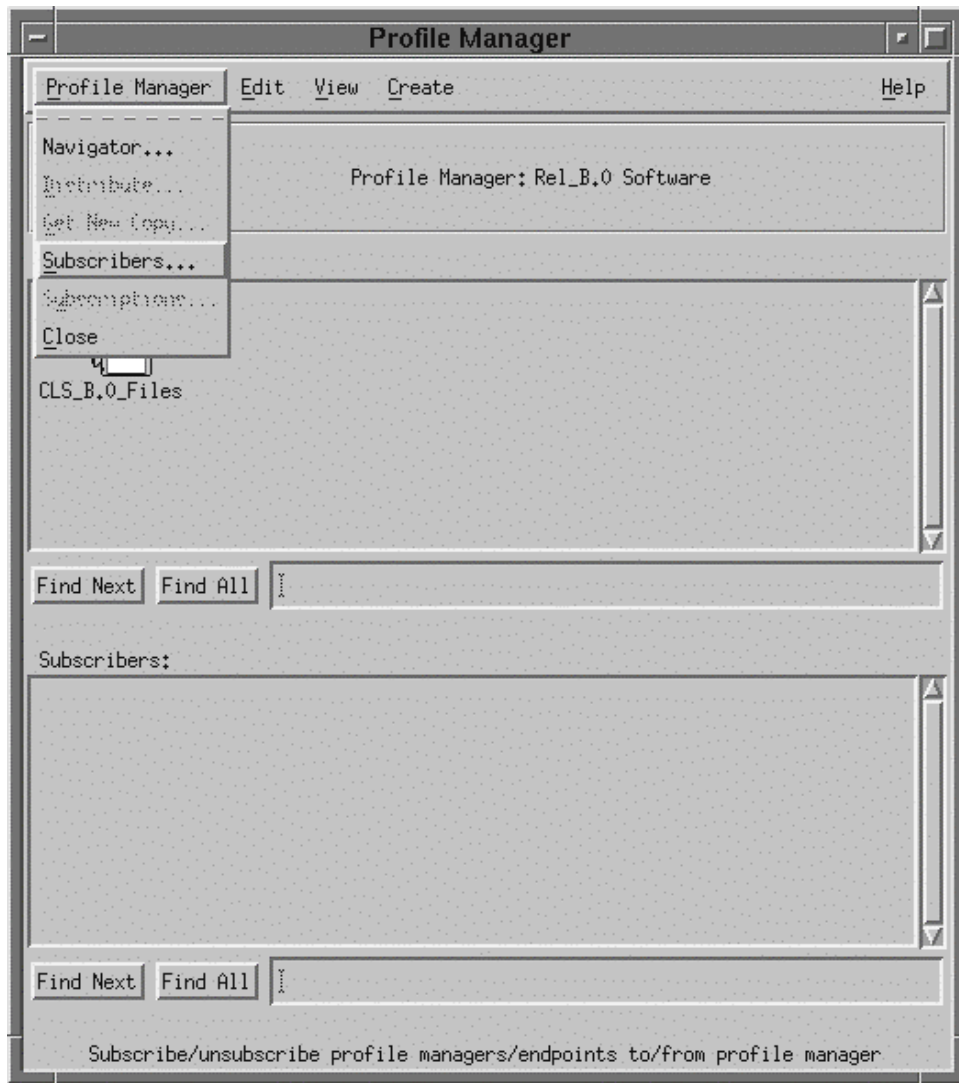


Figure 4.3.5-16. T/Courier Profile Manager Menu of Profile Manager Pop-up

Upon selection of the Subscribers option, the Subscribers pop-up is displayed. Select and move appropriate subscribers from the “Available to become Subscribers” side to the “Current Subscribers” side of the Subscribers pop-up. For software distribution purposes, the appropriate “Managed_Node” should be moved to the Current Subscribers side. [Note, the “Current Subscribers” side is always initially blank. Figure 4.3.5-17 shows subscribers that have already been moved to the “Current Subscribers” side.] Click the “**Set Subscription & Close**” button to save your selections.

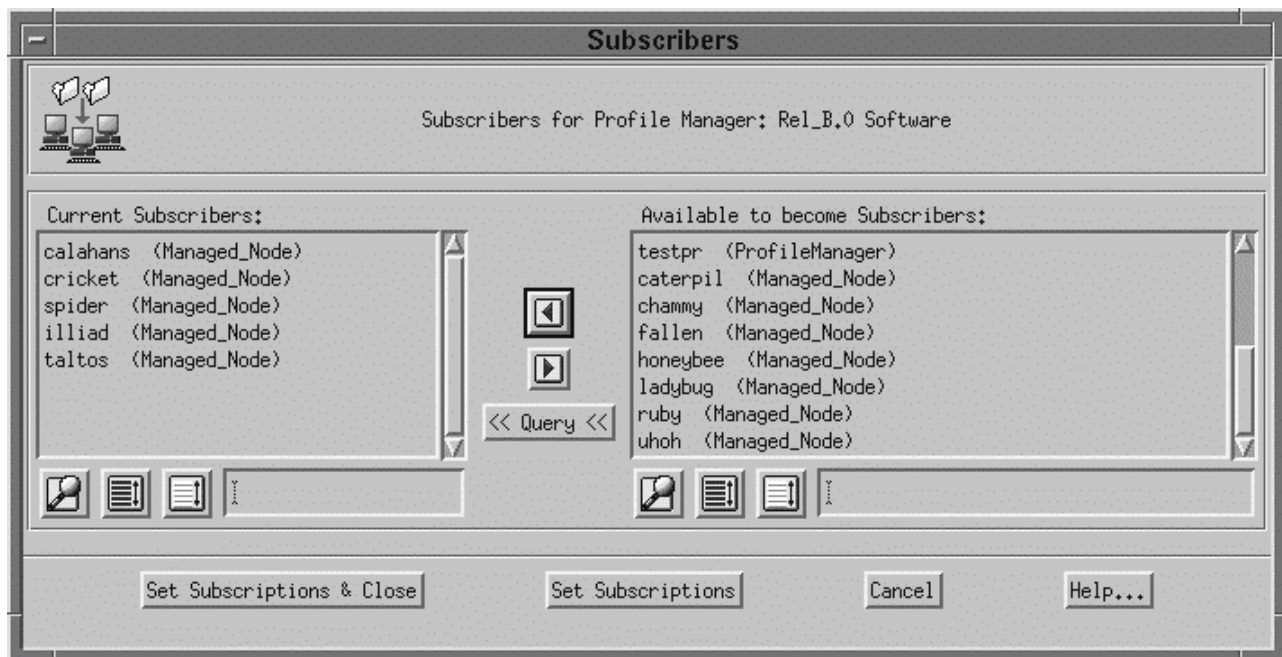


Figure 4.3.5-17. T/Courier Set Subscribers Pop-up

The Profile Manager, Rel_B.0 Software, now consists of a profile and a set of subscribers as shown in Figure 4.3.5-18.

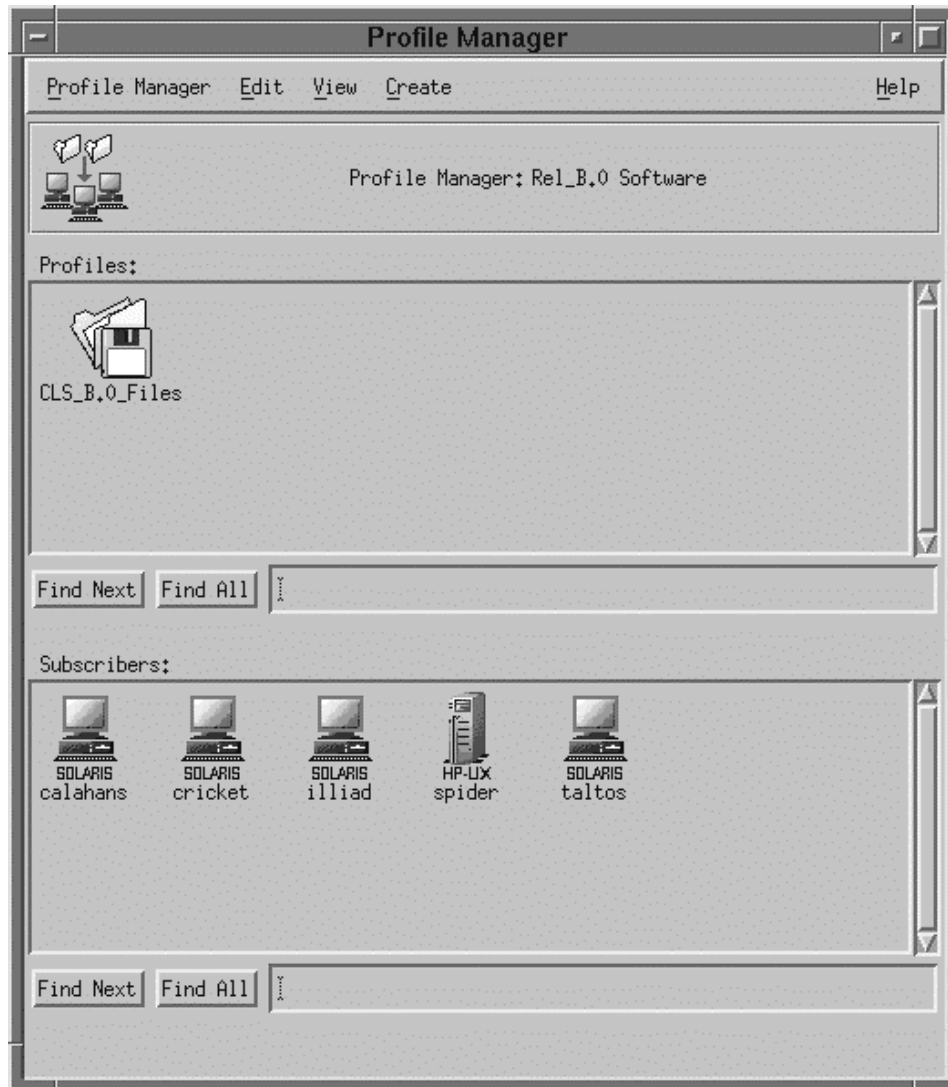


Figure 4.3.5-18. T/Courier Complete Profile Manager Pop-up

4.3.5.2.9 Distribute Software

Once a profile has been defined, software distribution can take place. On the Profile Manager Screen, First click the profile's icon and then click the appropriate subscriber(s) icon. See Figure 4.3.5-19. Next, click Profile Manager menu and select the Distribute option. In Figure 4.3.5-19 the profile, CLS_B.0_Files, and a subscriber, calahans, have been selected.



Figure 4.3.5-19. T/Courier Distribution Option of Profile Manager Pop-up

The “Distribute Profiles” pop-up is displayed as shown in Figure 4.3.5-20. Click the “**Distribute Now**” button to initiate distribution activity immediately.

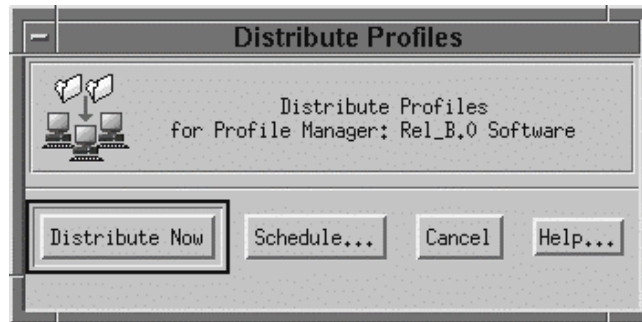



Figure 4.3.5-20. T/Courier Distribution Profiles Pop-up

When the “Distribute Profiles” pop-up disappears, the distribution activity is completed.

4.3.5.2.10 Schedule Distribution

Note, that there is also a “**Schedule**” button in Figure 4.3.5-20. This button enables the scheduling of distribution to occur at some other time. Click the "Schedule..." button if you want the software distribution to occur at some future time, e.g. during off hours. When you click the "Schedule..." button, the Add Scheduled Job screen shown in Figure 4.3.5-21 is displayed. Enter a descriptive name in the Job Label: box, set the date and time in the Schedule Job For: box, select the "Log to File:" option in the When Job Completes: box and enter the Host name and the File name. Then click the "Schedule Job & Close" button. The Add Scheduled Job screen is removed and the Profile Manager Screen is brought to the foreground. The distribution is now scheduled to occur at the specified time and the results will be posted in the specified Log. Refer to the T/Courier User's Manual for information about the other capabilities that can be initiated through use of the Add Scheduled Job screen.



Schedule Job

Job Name : distribute-profiles

Job Label : CLS_B.0_Files

☐ Disable the Job.

Description:

Distribute profiles

Schedule Job For:

Date: 1 11 2000

Time: 8 : 00

AM PM

Month

Day

Year

Hour

Minute

Repeat The Job:

☐ Repeat the job indefinitely.

☐ Repeat the job 0 times.

The job should start every 0 minutes

When Job Completes:

☐ Post Tivoli Notice: Available Group...

☐ Post Status Dialog on Desktop:

☐ Send email to:

☐ Log to File: File Browser...

Host : batgirl

File : /tmp/CLS_B.0_LOG

Set Retry/Cancel/Restriction Options...

Schedule Job & Close

Schedule Job

Close

Help...

Figure 4.3.5-21. T/Courier's Add Scheduled Job Screen

4.3.5.2.11 Check Status of Software Distribution

Go back to the T/Courier main pop-up and check the Operation Status box for results of the distribution. See Figure 4.3.5-22 for an example of the Operation Status display. For a detailed description of the distribution process, check the log file.

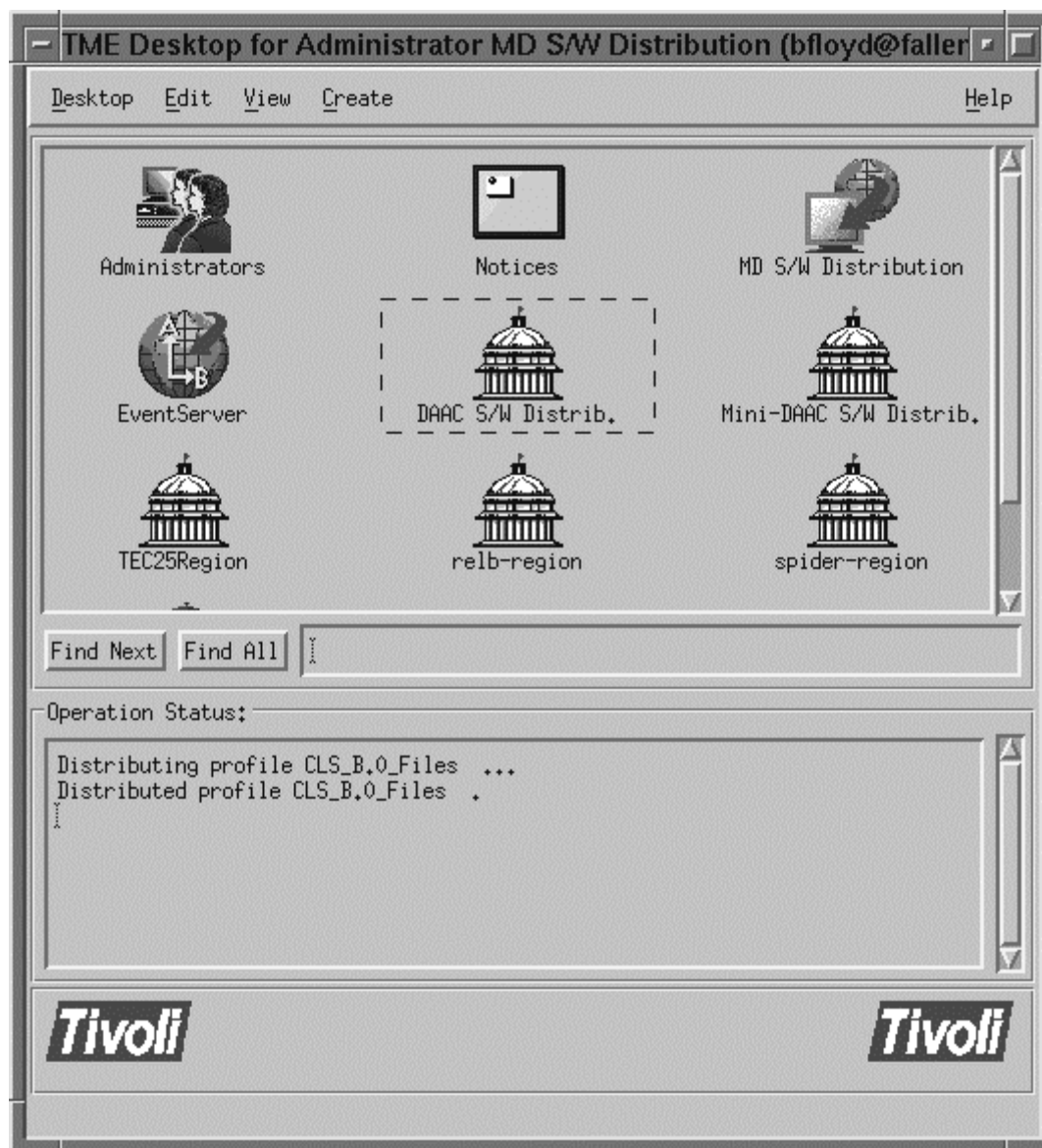


Figure 4.3.5-22. T/Courier Distribution Status of Main Screen

The Log file (if set up on the File Package Option pop-up as in Figure 4.3.5-13) will always provide a more definitive description of the distribution process. For example, contents of the logfile, Rel_B0_Tst_Log, for the above distribution are shown in Figure 4.3.5-23:

```
File Package:  "CLS_B.0_Files  "
Operation:     install  (m=5)
Finished:      Fri Jun 13 10:39:28 1997
-----
Source messages:
<none>
-----
calahans:SUCCESS
/tmp/CLS      : creating path
=====
```

Figure 4.3.5-23. Contents of the logfile, Rel_B0_Tst_Log

This log file's content indicates that the software distribution to the subscribing host, calahans, was successful. If an error occurs during distribution and/or the distribution is not successful, the log file will contain a detailed message concerning the problem and it will indicate that the software distribution to the listed platform failed.

4.3.5.2.12 Creating Additional Profiles

Additional profiles for a profile manager can be created by repeating the aforementioned procedure or by making clones of the profile created previously. Cloning a profile produces a duplicate of the profile being cloned in terms of its definition. If there are a large number of profiles that have to be created with the same settings but different source directory and files and/or destination directory, cloning will save time a lot of profile preparation time and insure settings consistency among the profiles.

To clone a previously created profile, click and highlight the profile to be cloned as shown on the Profile Manager's pop-up (Figure 4.3.5-24). Then click the "Edit" menu on that pop-up.

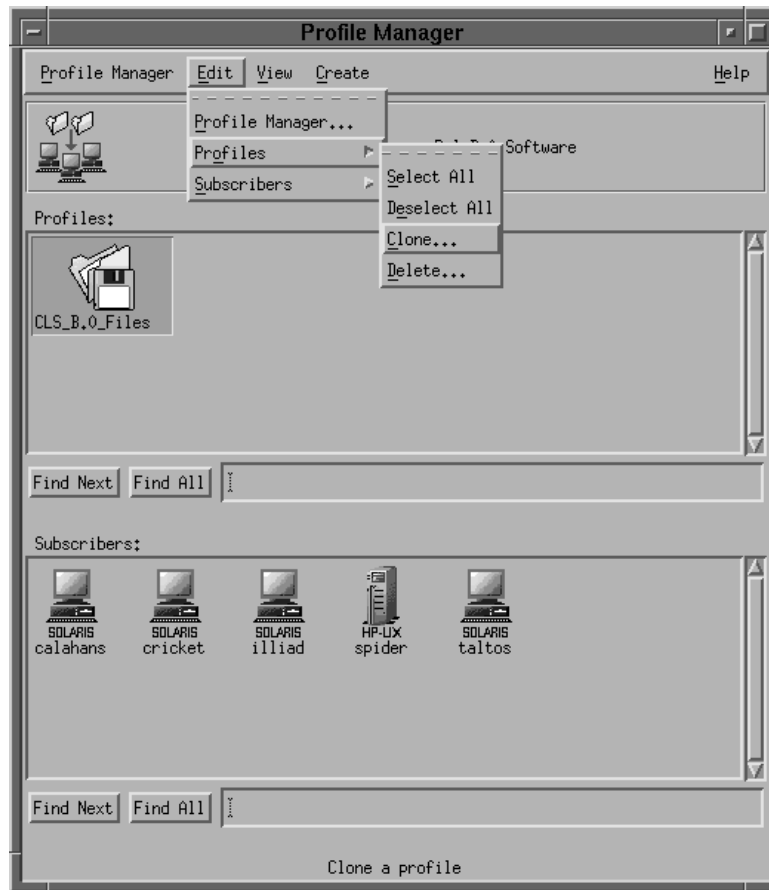


Figure 4.3.5-24. T/Courier Clone Option of Profile Manager Pop-up

On the drop down menu, click the “Profiles” option and then click the “Clone” option on the next drop down menu. The “Clone Profile” pop-up will appear as shown in Figure 4.3.5-25. The “Clone Profile” pop-up enables one to create one clone and then close the screen or one can create many clones before closing the screen. If there are more than one clone to be created, enter the name of the new profile into the “Name” box and click the clone button. The newly created profile will appear on the “Profile Manager” pop-up (see Figure 4.3.5-26) and the “Clone Profile” pop-up’s Name/Icon Label box will be cleared so that another new profile’s name can be entered. Repeat this process until all of the profiles have been created.

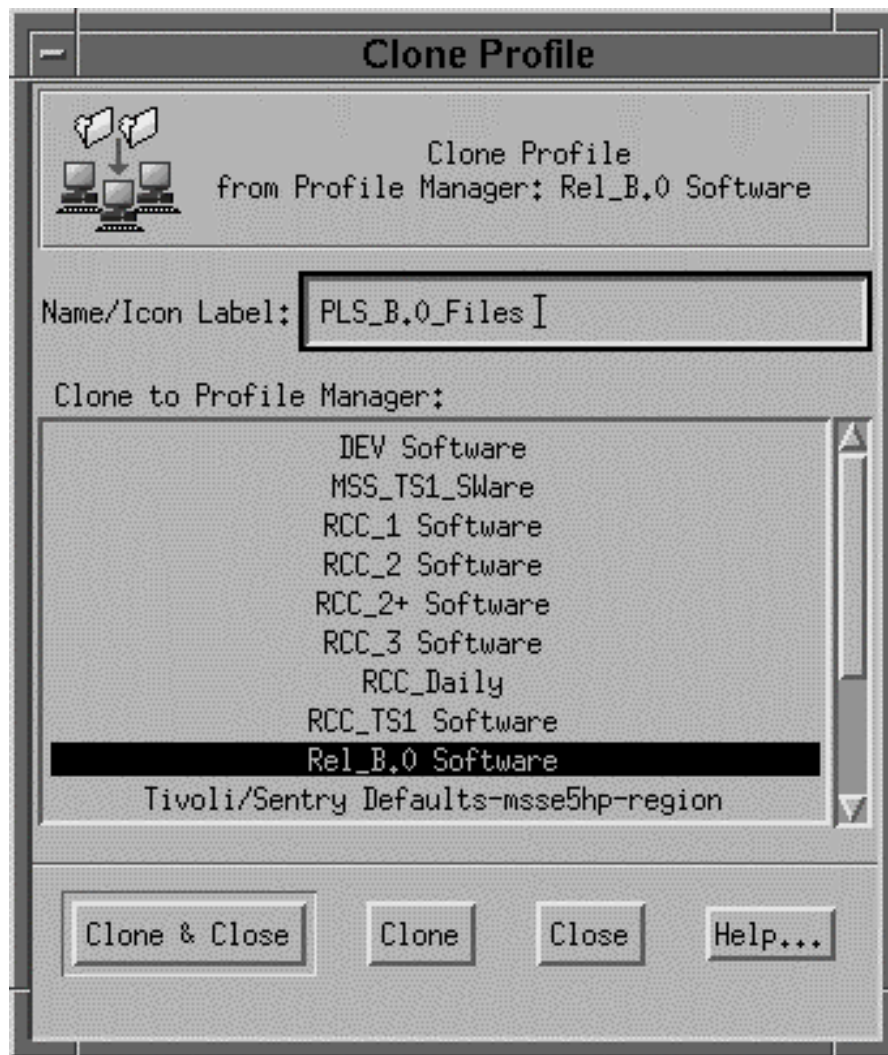


Figure 4.3.5-25. T/Courier Clone Profile Pop-up

When the name of the last profile has been entered, click the **“Clone and Close”** button. If there is only one clone to be created, enter the name of the new profile into the “Name/Icon Label” box and then click the **“Clone and Close”** button. The newly created profiles will be displayed on the Profile Manager pop-up and this completes the creation process.

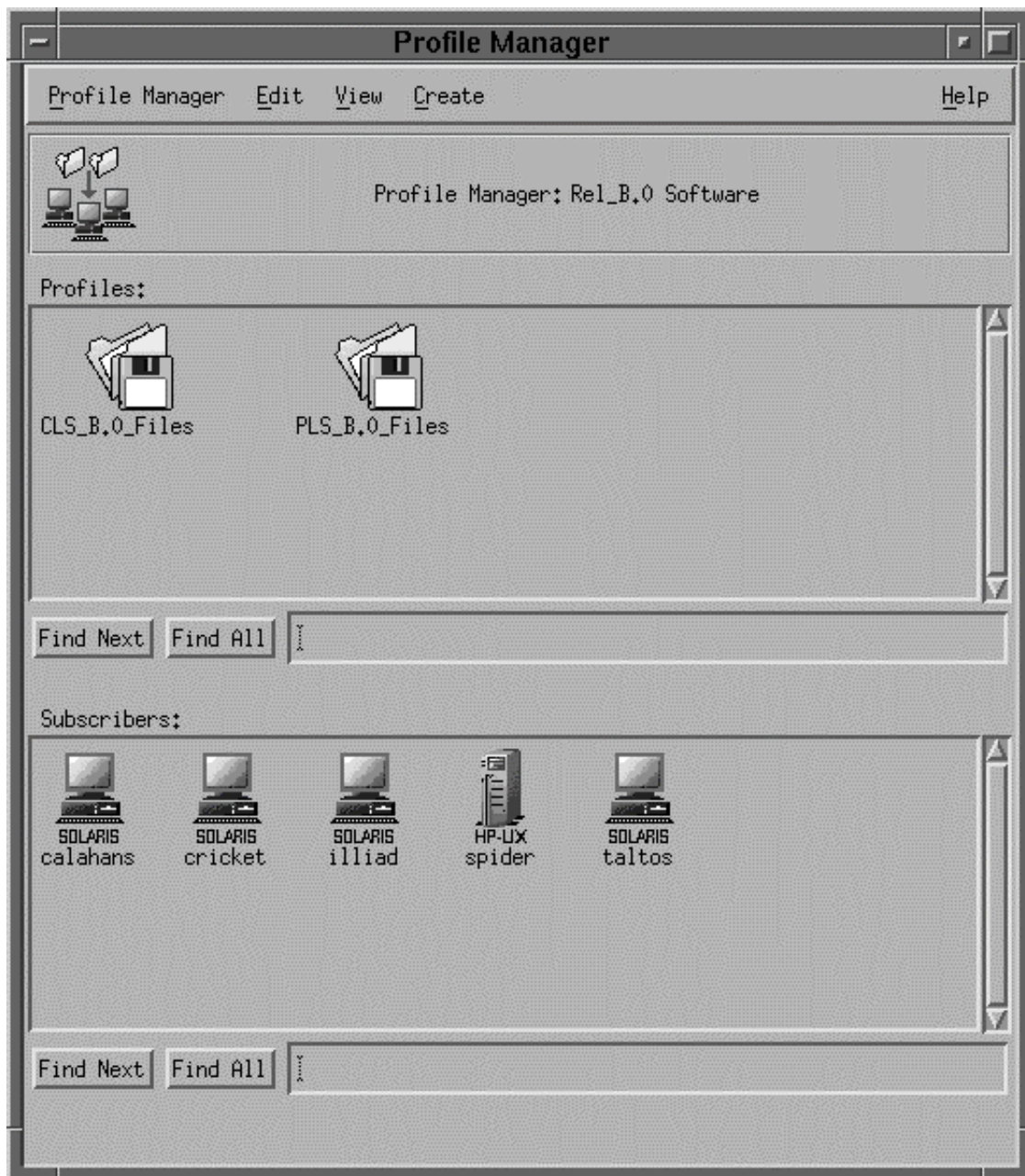


Figure 4.3.5-26. T/Courier Profile Clone display of the Main Screen

Now, the definition of the clone profile has to be revised before it can be used in software distribution activity. For each clone profile, click the profile's icon and bring up its File Package Properties pop-up (as described in Section 4.3.5.2.5) revise the source directory/files section. Then bring up the File Package Unix Options pop-up (as described in Section 4.3.5.2.6) and revise the destination directory path if necessary. Once the source directory/files and the

destination path has been appropriately revised, the profile is ready to be used in software distribution activity.

4.3.5.2.13 Remove a File Package

A distributed File Package can also be removed from the destination platform through use of T/Courier. To remove a file package go to the Profile Manager screen and place the mouse arrow on the icon of the file package to be remove. Click the right mouse button and a drop down menu will appear. Select the "Remove From Hosts..." option as shown in Figure 4.3.5-27. The Remove File Package screen is then displayed as shown in Figure 4.3.5-28.

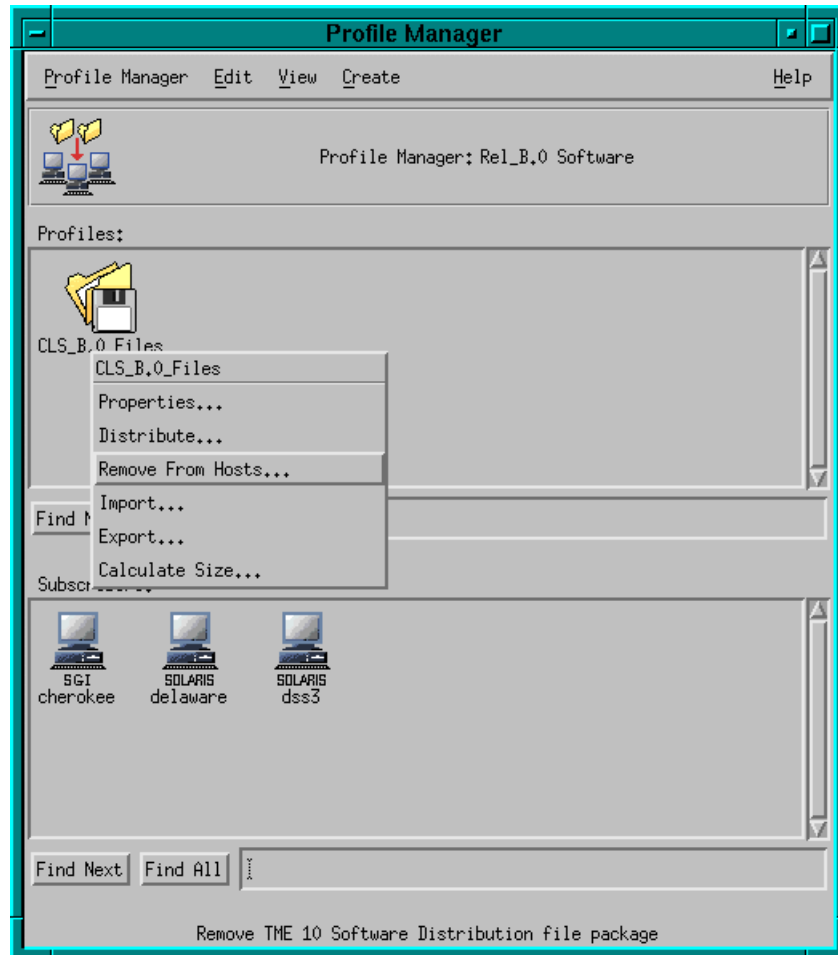


Figure 4.3.5-27. Profile Manager (Remove from Hosts option) Screen

On the Remove File Package screen, move the name of the target platform (s) from the "Available Subscribers" box to the "Remove File Package From:" box. Click the "Remove and Close" button.

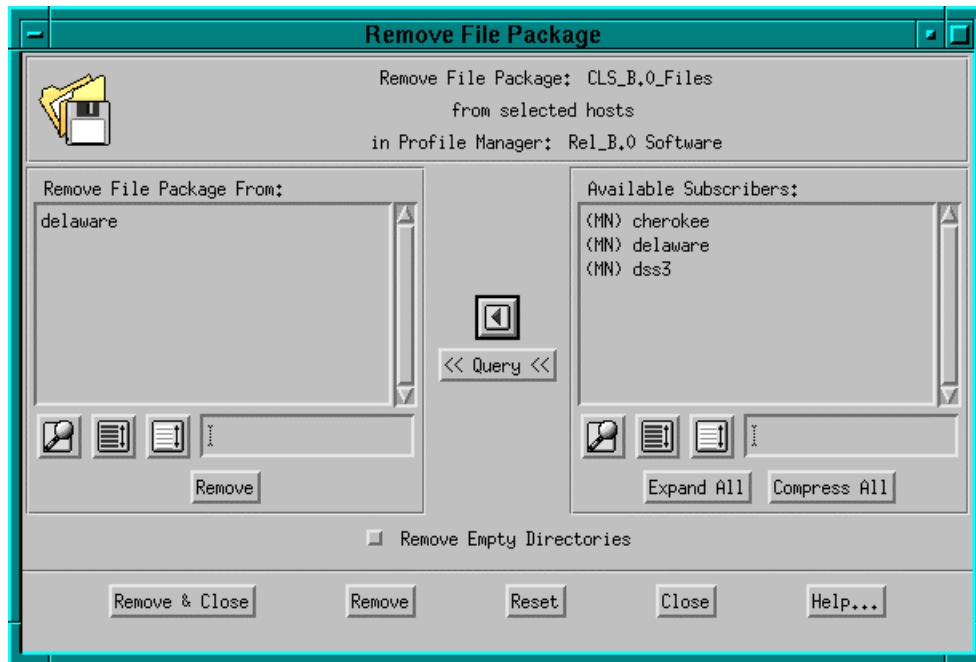


Figure 4.3.5-28. Remove File Package Screen

T/Courier will then remove all directories and files (previously distributed via the subject file package) from the platform (s) listed in the Remove File Package From: box on the Remove File Package screen. Check the Log file (set up on the File Package Properties screen, Figure 4.3.5-13) for the results of the file package removal activity.

4.3.5.3 Required Operating Environment

T/Courier requires a UNIX platform as the source files' host. The target or destination platforms can be UNIX platforms or PC's. ECS T/Courier is used on Sun hosts (Solaris 2.5 OS), Hewlett Packard hosts (HP 10.0.1 OS), and SGI (SGI Irix 6.2) hosts.

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for Tivoli/Courier, refer to the ECS Baseline Information System web page, URL <http://pete.hitc.com/baseline/index.html>., COTS Release Notes, Tivoli.

4.3.5.4 Databases

Tivoli maintains a proprietary data store. Tivoli data is only accessible through the GUI described in Section 4.3.5.2.

4.3.5.5 Special Constraints

The operator must have Tivoli Administrator privileges to create the regions and associated components.

4.3.5.6 Outputs

Outputs consist of T/Courier information displayed on the GUIs discussed in Section 4.3.5.2, updates the Tivoli data store, and event and error messages discussed in Section 4.3.5.7.

4.3.5.7 Event and Error Messages

All event and summary error messages are displayed in the Operation Status box, main screen. Detailed messages would be placed in the log file, if one is established as described in Section 4.3.5.2.5.

4.3.5.8 Reports

None.

4.3.6 FLEXlm

FLEXlm is a commercially available network license management product that helps the ECS M&O staffs at the DAACs, EOC, and SMC administer licenses and enforce licensing provisions for FLEXlm-enabled COTS software at the site. It enforces licensing provisions based on information from vendor-provided license keys and lets license administrators allow, deny, or reserve check out of licenses based on user, host, or display. FLEXlm handles floating (concurrent use) licenses, node locked licenses, and combinations of the two.

FLEXlm processing elements include license manager daemons, vendor daemons, license files, and FLEXlm-enabled applications. One or more license manager daemons control vendor daemon operations and enables client applications to contact them. Vendor daemons grant or deny concurrent use licenses requested by applications, tracking how many are checked out and by which users. License files are text files that contain the provisions for one or more licenses from one or more vendors, including the name of the vendor daemon needed to serve the license and the host(s) to use as license server(s). The applications communicate with the license and vendor daemons using embedded FLEXlm client software to request licenses in order to run.

FLEXlm permits use of single, multiple, or redundant server hosts, and can operate more than one license manager daemon on a given node. A license manager daemon serves all the licenses in the license file it uses, and different license files use separate license manager daemons (distinguished by the port number they use to communicate). In a redundant license server configuration, license manager daemons for a license file are executed on three server nodes such that all licenses in the file are available if any two out of the three server nodes is running. In a multiple license server configuration, licenses are allocated among multiple license files and a separate license manager daemon is run for each file.

Table 4.3.6-1 summarizes the operating functions that FLEXlm supports.

Table 4.3.6-1. Common ECS Operating Functions Performed with FLEXlm (1 of 2)

Operating Function	Function Name	Description	When and Why to Use
Start license manager	lmgrd	Starts FLEXlm's main daemon program which reads the license file and manages vendor daemons and the connections between them and their client applications.	Used to initiate license management server processes.
Stop license manager	lmdown	Shuts down all license daemons (both lmgrd and all vendor daemons) on all nodes.	Used anytime to stop network license activities, such as when the license manager host is to be rebooted.

Table 4.3.6-1. Common ECS Operating Functions Performed with FLEXlm (2 of 2)

Operating Function	Function Name	Description	When and Why to Use
Install decimal format licenses	lminstall	Converts licenses between decimal and readable formats and between different versions of FLEXlm license formats.	Used anytime primarily to install decimal format licenses in readable format.
Read new licenses	lmreread	Causes the license servers to reread the license file they are using and start any new vendor daemons.	Used anytime to put the provisions of an updated license file into effect.
Monitor the status of network licensing activities	lmstat	Generates lists containing such information as active licenses, users of licensed product features, users of individual license management daemons, and status of server nodes.	Used anytime to check on the health and functioning of license server daemons, identify licenses installed, determine licenses in use, or review logged licensing events.
Switch to new report log	lmswitchr	Causes the license servers to use a new or different file as the report log.	Not used. Report logs can be read only by the FLEXadmin product. FLEXadmin is not provided in ECS due to security constraints (i.e., use of remote shell utilities).
Verify accuracy of license file	lmcksum	Performs a checksum of a license file	Used anytime to verify data entry errors in a license file.
Troubleshoot problems serving licenses	lmdiag	Performs problem diagnosis	Used anytime to help determine why a license cannot be checked out.
Obtain license key from vendor	lmhostid	Reports the hostid of a system	Used anytime to determine the host code that must be provided to vendors when obtaining a software license.
Recover inaccessible licenses	lmremove	Removes a single user's license for a specified feature	Used when a client node crashes in order to recover a checked out license not automatically freed.
Determine version compatibility between the license server and an application	lmver	Reports the FLEXlm version of a library of binary files.	Used anytime to determine what version of FLEXlm a FLEXlm-enabled product uses.

4.3.6.1 Quick Start Using FLEXlm

Operators interact with FLEXlm via the license manager daemons and license files. FLEXlm's user interface is a set of Unix-like commands for starting, stopping, and requesting services from a license manager daemon. Command arguments specify input parameters, most notably the name of the license file whose contents determine the servers, daemons, and license provisions affected by the command. Operators install and maintain license files using any preferred editor.

4.3.6.1.1 Command Line Interface

To start FLEXlm license server daemons in a consistent, predictable manner, execute the following startup script:

```
>/etc/init.d/lmgrd start
```

Before it invokes FLEXlm's "lmgrd" program, the script adds the extension ".old" to the current FLEXlm log file (if any) so the new daemon will create its own. It then runs "lmgrd" as user "flexlm" to avoid running as "root", and it specifies the license and log file paths the daemons are to use (i.e., "/usr/local/flexlm/licenses/license.dat" and "/tmp/license_log", respectively).

If license manager daemons are needed to serve licenses in additional license files, they can be started by running the "lmgrd" program as follow:

```
>su flexlm -c /etc/opt/licenses/lmgrd.ste -c license_file -l logfile -2 -p  
& (SUNs only)
```

```
>su flexlm -c /etc/opt/licenses/lmgrd -c license_file -l logfile -2 -p  
& (SGIs only)
```

To stop the FLEXlm license daemons that are running on all machines in the network, execute the FLEXlm command:

```
lmdown
```

However, to shut down the license manager daemons on a single machine only, log on to the machine and type the following command instead:

```
>/etc/init.d/lmgrd stop
```

Table 4.3.6-2 summarizes commands available with FLEXlm. See Chapter 6 of the *FLEXlm End User Manual* for the complete description of each command and its arguments.

Table 4.3.6-2. Command Line Interfaces (1 of 2)

Command Line Interface	Description and Format	When and Why Used
lmcksum	lmcksum [-c license_file]	To verify license file data.
lmdiag	lmdiag [-c license_file] \ [-n] [feature]	To diagnose problems when a license cannot be checked out.

Table 4.3.6-2. Command Line Interfaces (2 of 2)

Command Line Interface	Description and Format	When and Why Used
Imdown	Imdown [-c <i>license_file</i>] [-q]	To shutdown all license daemons (both Imgrd and all vendor daemons) on all nodes.
Imgrd	Imgrd [-app] [-c <i>license_file</i>] \ [-t <i>timeout_interval</i>] [-l <i>logfile</i>] \ [-s <i>timestamp_interval</i>] [-2 -p] [-v] \ [-x Imdown] [-x Imremove]	To run the main daemon program for FLEXlm.
Imhostid	Imhostid [-n]	To determine the hostid of a system.
Iminstall	Iminstall [-i { <i>infile</i> -}] [-o <i>outfile</i>] \ [-overfmt {2 3 4 5 5.1 6}] \ [-odecimal]	To convert licenses between decimal and readable formats and between different versions of FLEXlm formats.
Imremove	Imremove [-c <i>file</i>] <i>feature user host</i> \ <i>display</i> or Imremove [-c <i>file</i>] -h <i>feature host</i> \ <i>port handle</i>	To remove a single user's license for a specified feature. (This is only needed when a client node crashes, since that's the only condition where a license is not automatically freed. If the application is active, it checks out the license again after it is freed by Imremove.)
Imreread	Imreread [-c <i>license_file</i>] \ [-vendor <i>name</i>]	To cause the license daemon to reread the license file and start any new vendor daemons that have been added. In addition, one or all pre-existing daemons are signaled to reread the license file for changes in feature licensing information.
Imswitchr	Imswitchr [-c <i>license file</i>] <i>feature</i> \ <i>new-file</i> or Imswitchr [-c <i>license file</i>] <i>vendor</i> \ <i>new-file</i> (v5.0+ onl)	To start recording license events in a new or different log file for the FLEXadmin tool.
Imstat	Imstat [-a] [-A] [-c <i>license_file</i>] \ [-f <i>feature</i>] [-i [<i>feature</i>]] \ [-S <i>vendor</i>] [-s <i>hostname</i>] \ [-t <i>value</i>]	To report the status of all network licensing activities.
Imver	Imver <i>filename</i>	To identify the FLEXlm version of a library or binary file.

4.3.6.2 FLEXlm Main Screen

FLEXlm does not provide for operator interaction via a GUI. All interactions are through the Unix command line or a Unix script.

4.3.6.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM-controlled document for each product. To find the installation and release notes for FLEXlm, refer to the ECS Baseline Information System web page, URL <http://cmdm.east.hitc.com/>.

4.3.6.3.1 Interfaces and Data Types

The ECS fault management tool, Tivoli, monitors FLEXlm's event logs, error logs, and debug file in order to notify operators when activity of interest has occurred. Tivoli interrogates the log file frequently, searching new messages for text strings that match pre-determined criteria. When one is found, the operator is notified via the Tivoli Enterprise Console (TEC). TEC is explained in section 4.2.2. Table 4.3.6-3 lists FLEXlm's interfaces for Version 2.0.

Table 4.3.6-3. Interface Protocols

Interface	Type of Primary Interface Protocols	Comments
Tivoli	ASCII Log file	Tivoli's log file adapter monitors the FLEXlm debug file in order to notify operators when interesting licensing events occur.

4.3.6.4 Databases

FLEXlm uses license and options files in lieu of a database. License files are independent text files, each of which contains all the site-specific information FLEXlm needs to serve the licenses specified in the file. Every license manager daemon requires a license file, and different license files require separate license manager daemons. To simplify operations, operators may combine license files obtained from multiple vendors if they are compatible. Refer to chapter 2 of the *FLEXlm End User Manual* for information about the format of a license file, and refer to chapter 3 about when and how to combine them.

Options files are text files associated with specific vendor daemons named in license files. These files allow the operator to specify criteria for granting licenses to users, wait time before reclaiming inactive licenses, and how much license usage information is to be logged. FLEXlm does not require an options file. When specified however, there can only be one options file per vendor daemon, and each vendor needs a separate options file. See chapter 5 of the *FLEXlm End User Manual* for details.

4.3.6.5 Special Constraints

FLEXlm cannot be run without one or more license files, and most FLEXlm commands require the name of a license file in order to execute. License files identify the host and port number a client is to use to communicate with the license server. If the license file parameter is missing from the command, FLEXlm tries using the file(s) named in the environment variable LM_LICENSE_FILE. If LM_LICENSE_FILE is not set, the default license file name */usr/local/flexlm/licenses/license.dat* is assumed.

The *FLEXlm End User Manual* recommends the following operating constraints :

- Keep a copy or link of the license file in the vendor's "default" location; some vendors expect to find their license files at pre-determined locations. Refer to Section 1.1.1 of the *FLEXlm End User Manual*.
- Run lmgrd as a non-privileged user (not *root*) to avoid security risks. Refer to Section 6.4 of the *FLEXlm End User Manual*

Also, re-use the old pathname when creating a new debug file, if possible. Tivoli monitors the file in order to notify operators when significant licensing events occur. Changing the pathname requires a corresponding change in the configuration of Tivoli's log file adapter. See section 4.2.2.3.1 for more information.

4.3.6.6 Outputs

FLEXlm's principal outputs are inter-process communications with COTS applications attempting to check out and check in FLEXlm licenses, but these are generally transparent to the operator. Outputs visible to the operator include an ASCII log of network licensing events and errors, and messages constituting responses to operator-entered commands.

4.3.6.7 Event and Error Messages

FLEXlm writes both status and error messages to standard output. Typically, operators redirect all output from the startup command "lmgrd" to a file, known as the debug file, to create a FLEXlm log at the site.

Appendix D of the *FLEXlm End User Manual* lists what causes the more common messages an operator may encounter, but primarily those written by the FLEXlm programs. Event and error messages logged by FLEXlm-enabled COTS applications are sometimes found in the application's manuals. Messages are typically self-explanatory and identify the date/time of the event, the license server host, the product or feature involved, and the name of the user.

4.3.6.8 Reports

FLEXlm's *lmstat* utility can generate the status reports listed in Table 4.3.6-4. Each is written to standard output and may be redirected to a named file or a printer using standard Unix conventions. Reports are generated on demand as required to meet operational needs.

Table 4.3.6-4. Reports

Report Type	Report Description	Example
lmstat -s	Lists status of clients running on a named host	Figure 4.3.6-1
lmstat -i	Lists license information about all or a named feature	Figure 4.3.6-2
lmstat -a	Lists all information about current network licensing activities	Figure 4.3.6-3
lmstat -A	Lists all currently active licenses	Figure 4.3.6-4
lmstat -f	Lists users of all or a named feature	Figure 4.3.6-5
lmstat -S	Lists users of all or a named vendor's features	Figure 4.3.6-6

Note: FLEXlm documentation refers to a report log and a set of license administration reports associated with a companion product, FLEXadmin. FLEXadmin is not part of the ECS deployment. *lmstat* does not use the “report log” and does not produce FLEXadmin reports.

4.3.6.8.1 Sample Reports

The figures that follow contain sample FLEXlm status reports. One sample is provided for each report listed in Table 4.3.6-4.

```
lmstat - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 10:54

License server status: 1744@jupi,1744@intrepid,1744@enterprise
  License file(s) on jupi: /usr/local/flexlm/licenses/license.dat:

    jupi: license server UP v6.1
    intrepid: license server UP (MASTER) v6.1
    enterprise: license server UP v6.1

Vendor daemon status (on intrepid):

  xnidaem: UP v6.0
  IDE: UP v4.1
  rational: UP v6.0
  setechd: UP v6.1
  idl_lmgrd: UP v6.1
  ICSBX: UP v3.0
  ncdlmd: UP v4.1
  dmccabe: UP v5.11
  suntechd: UP v4.1
  cayenne: UP v5.12
```

Figure 4.3.6-1. All Clients (lmstat -s) Report

lmstat - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 10:55

NOTE: lmstat -i does not give information from the server,
but only reads the license file. For this reason,
lmstat -a is recommended instead.

Feature	Version	# licenses	Expires	Vendor
xnl	1.0	6	1-jan-0	xnidaem
stpcore	2.000	56	31-dec-00	IDE
omt	3.000	50	31-dec-00	IDE
bach	2.000	3	31-dec-00	IDE
imtbl	2.000	3	31-dec-00	IDE
crud	2.000	3	31-dec-00	IDE
sqlgen	2.000	3	31-dec-00	IDE
se	6.000	3	31-dec-00	IDE
se_reveng	6.000	1	31-dec-00	IDE
se_cbrowse	6.000	1	31-dec-00	IDE
rose.ada.unix	5.000	10	01-jan-00	rational
rose.c++.unix	5.000	10	01-jan-00	rational
rose.java.unix	5.000	10	01-jan-00	rational
rose.modeler.unix	5.000	10	01-jan-00	rational
ada.sun4	2.000	30	01-jan-00	rational
apex.sun4.self_target.c	2.000	30	01-jan-00	rational
asis	2.000	30	01-jan-00	rational
env_base.sun4	2.000	30	01-jan-00	rational
rose.cpp.sun4	4.000	50	01-jan-00	rational
soda	2.000	50	01-jan-00	rational
summit_base.sun4	2.000	30	01-jan-00	rational
summit_cm.sun4	2.000	30	01-jan-00	rational
summit_tm.sun4	2.000	30	01-jan-00	rational
ddts	4.1	10000	31-oct-2002	rational
APEX_CPPT.sun4	2.000	30	01-jan-00	rational
Admin	7.000	6	1-jan-0	setechd
Modularity	7.000	30	1-jan-0	setechd
		.		
		.		
		.		
Extract	7.000	2	1-jan-0	setechd
DISCOVER	7.000	30	1-jan-0	setechd
idl	5.200	200	1-jan-0000	idl_lmgrd
insight	2.000	20	1-jan-0000	idl_lmgrd
BuilderXcessory	3.000	17	01-jan-00	ICSBX
BuilderXcessory	5.000	4	01-jan-00	ICSBX
DatabaseXcessory	1.000	5	01-jan-00	ICSBX
Adobe-DPS-Extension	1.000	100	1-jan-0	ncdlmd
mwm	1.000	100	1-jan-0	ncdlmd
GLX	1.000	20	1-jan-0	ncdlmd
X3D-PEX	1.000	20	1-jan-0	ncdlmd
XIE	1.000	20	1-jan-0	ncdlmd
mvt	6.000	6	31-dec-2008	dmccabe
procompiler.c	3.000	1	01-jan-0	suntechd
procompiler.c	4.200	1	01-jan-0	suntechd

Figure 4.3.6-2. License Information (lmstat -i) Report

```

lmstat - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 10:57

License server status: 1744@jupi,1744@intrepid,1744@enterprise
License file(s) on jupi: /usr/local/flexlm/licenses/license.dat:

jupi: license server UP v6.1
intrepid: license server UP (MASTER) v6.1
enterprise: license server UP v6.1

Vendor daemon status (on intrepid):

xnidaem: UP v6.0
IDE: UP v4.1
rational: UP v6.0
setechd: UP v6.1
idl_lmgrd: UP v6.1
ICSBX: UP v3.0
ncdlmd: UP v4.1
dmccabe: UP v5.11
suntechd: UP v4.1
cayenne: UP v5.12

Feature usage info:

Users of xni: (Total of 6 licenses available)

Users of stpcore: (Total of 56 licenses available)

Users of omt: (Total of 50 licenses available)

Users of bach: (Total of 3 licenses available)
.
.
.
Users of ddts: (Total of 10000 licenses available)

"ddts" v4.1, vendor: rational
floating license

dwashing yakusaka /dev/pts/8 (v4.1) (jupi/1744 4001), start Mon 3/29 10:18 (linger: 1800)
chunter borg /dev/pts/12 (v4.1) (jupi/1744 4606), start Tue 3/30 8:55 (linger: 1800)
michelle stargazer /dev/pts/25 (v4.1) (jupi/1744 2013), start Mon 4/5 11:19 (linger:
1800)
twicker pongo.hitc.com /dev/tty (v4.1) (jupi/1744 6231), start Mon 4/5 14:55 (linger:
1800)
.
.
.

```

Figure 4.3.6-3. All Activities (lmstat -a) Report

```

lmstat - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 10:57

License server status: 1744@jupi,1744@intrepid,1744@enterprise
License file(s) on jupi: /usr/local/flexlm/licenses/license.dat:

jupi: license server UP v6.1
intrepid: license server UP (MASTER) v6.1
enterprise: license server UP v6.1

Vendor daemon status (on intrepid):

xnidaem: UP v6.0
IDE: UP v4.1
rational: UP v6.0
setechd: UP v6.1
idl_lmgrd: UP v6.1
ICSBX: UP v3.0
ncdlmd: UP v4.1
dmccabe: UP v5.11
suntechd: UP v4.1
cayenne: UP v5.12

Feature usage info:

Users of xni: (Total of 6 licenses available)

Users of stpcore: (Total of 56 licenses available)
.
.
.

Users of rose.modeler.unix: (Total of 10 licenses available)

"rose.modeler.unix" v5.000, vendor: rational
floating license

perabell sydney ncdso23:0.0 (v5.0) (jupi/1744 1419), start Fri 4/9 10:12
nchan sydney ncdpl02:0.0 (v5.0) (jupi/1744 5838), start Fri 4/9 10:38

Users of ada.sun4: (Total of 30 licenses available)

Users of apex.sun4.self_target.c++: (Total of 30 licenses available)
.
.
.

Users of ddts: (Total of 10000 licenses available)

"ddts" v4.1, vendor: rational
floating license

dwashing yakusaka /dev/pts/8 (v4.1) (jupi/1744 4001), start Mon 3/29 10:18 (linger: 1800)
chunter borg /dev/pts/12 (v4.1) (jupi/1744 4606), start Tue 3/30 8:55 (linger: 1800)
michelle stargazer /dev/pts/25 (v4.1) (jupi/1744 2013), start Mon 4/5 11:19 (linger: 1800)
twicker pongo.hitc.com /dev/tty (v4.1) (jupi/1744 6231), start Mon 4/5 14:55 (linger: 1800)
.
.
.

Users of Y2K: (Total of 30 licenses available)

"Y2K" v7.000, vendor: setechd
floating license

bhough deimos /dev/pts/3 (v7.0) (jupi/1744 429), start Fri 4/9 9:53
yyang deimos /dev/pts/4 (v7.0) (jupi/1744 104), start Fri 4/9 10:17

Users of Metrics: (Total of 30 licenses available)
.

```

Figure 4.3.6-4. All Active Licenses (lmstat -A) Report

```

lmstat - Copyright (C) 1989-1998 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 11:02

Users of ddts:  (Total of 10000 licenses available)

    "ddts" v4.1, vendor: rational
    floating license

        dwashing yakusaka /dev/pts/8 (v4.1) (jupi/1744 4001), start Mon 3/29 10:18 (linger: 1800)
        chunter borg /dev/pts/12 (v4.1) (jupi/1744 4606), start Tue 3/30 8:55 (linger: 1800)
        michelle stargazer /dev/pts/25 (v4.1) (jupi/1744 2013), start Mon 4/5 11:19 (linger:
1800)
        twicker pongo.hitc.com /dev/tty (v4.1) (jupi/1744 6231), start Mon 4/5 14:55 (linger:
1800)
        .
        .
        .

```

Figure 4.3.6-5. Users of Named Feature (lmstat -f) Report

```

lmstat - Copyright (C) 1989-1997 Globetrotter Software, Inc.
Flexible License Manager status on Fri 4/9/1999 11:49

DAEMONS in configuration file: xnidaem IDE rational setechd idl_lmgrd ICSBX ncdlmd dmccabe
suntechd cayenne
Users of features served by setechd:
Users of Admin:  (Total of 6 licenses available)

Users of Modularity:  (Total of 30 licenses available)

Users of Delta:  (Total of 30 licenses available)

Users of Package:  (Total of 30 licenses available)

Users of AutoDoc:  (Total of 2 licenses available)

Users of Dormant:  (Total of 1 licenses available)

Users of Y2K:  (Total of 30 licenses available)

    "Y2K" v7.000, vendor: setechd
    floating license

bhough deimos /dev/pts/3 (v7.0) (jupi/1744 429), start Fri 4/9 9:53
yyang deimos /dev/pts/4 (v7.0) (jupi/1744 104), start Fri 4/9 10:17

Users of Metrics:  (Total of 30 licenses available)

Users of C_CPP:  (Total of 30 licenses available)
        .
        .
Users of DISCOVER:  (Total of 30 licenses available)

    "DISCOVER" v7.000, vendor: setechd
    floating license

bhough deimos /dev/pts/3 (v7.0) (jupi/1744 1349), start Fri 4/9 9:53
yyang deimos /dev/pts/4 (v7.0) (jupi/1744 1236), start Fri 4/9
10:17

```

Figure 4.3.6-6. Users of Named Vendor's Features (lmstat-S) Report

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4.4 Security and Accountability

This section describes the security and accountability tools used by DAAC operators:

1. DCE Cell Manager
2. TCP Wrapper
3. Crack
4. SATAN
5. TripWire
6. Tivoli (Enterprise Console and Admin)
7. Cryptographic Management Interface (CMI)

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4.4.1 DCE Cell Manager

The DCE Cell Manager (also referred to as “Chisholm DCE Cell Manager 1.6.2”) toolset can administer various components and interactions of a DCE cell including:

- **Namespace Manager** - manages a DCE cell’s directory namespace
- **Configuration Manager** - manages a DCE cell’s Distributed Time Service (DTS) processes and configuration
- **Security Manager** - manages a DCE cell’s security registry

DCE Cell Manager is used to perform the operator functions listed in Table 4.4.1-1.

Table 4.4.1-1. Common ECS Operator Functions Performed with DCE Cell Manager

Operating Function	GUI	Description	When and Why to Use
Organizing Cell Directory Service (CDS) Namespace Directories	Namespace Manager	Manages a DCE cell’s directory namespace.	When the need arises to manage, maintain, and monitor the cell namespace, keeping entries and access to them up to date.
Configuring the Basic Cell.	Configuration Manager	Manages a DCE cell’s configuration.	When a DCE cell’s configuration needs managing.
Synchronizing system clocks.	Configuration Manager	Manages a DCE cell’s Distributed Service tasks.	When system clocks need synchronizing.
Populating the Security Registry.	Security Manager	Manages a DCE cell’s security registry.	When the need arises, to: <ul style="list-style-type: none">• allow addition, modification, and deletion of principal accounts for new users.• create groups of principals to control access to registry and CDS objects.• set policies on passwords and accounts.• maintain replicas of the database that contains the registry.

4.4.1.1 Quick Start Using DCE Cell Manager

To execute the DCE Cell Manager from the command line prompt type:

```
>/opt/cellmgr/bin/cellManager
```

For more information on using DCE Cell Manager, see the section “Starting and Using DCE Cell Manager”, page 32 of the *Cell Manager 1.6. Overview and User’s Guide*.

4.4.1.2 DCE Cell Manager Main Screen GUIs

In order to use the DCE Cell Manager, the operator must first login to a DCE Cell (See Figure 4.4.1-1). For more information on starting the DCE Cell Manager, see section on “Starting and Using DCE Cell Manager and Logging In”, pages 32 through 34 of the *Cell Manager 1.6 Overview and User’s Guide*.

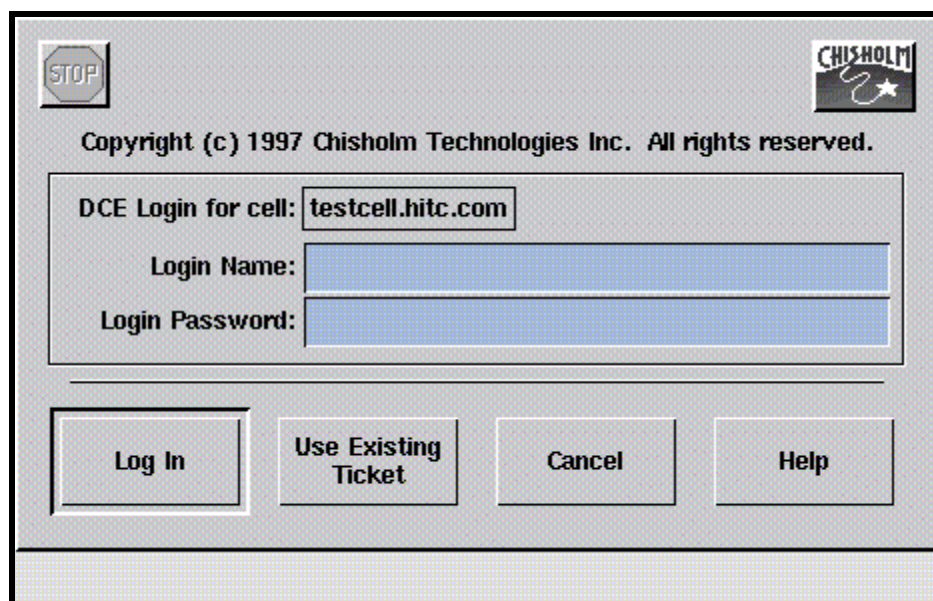


Figure 4.4.1-1. DCE Login Dialog

4.4.1.2.1 DCE Cell Manager Launcher

If the login is accepted, the DCE Cell Manager Launcher will appear as shown in Figure 4.4.1-2. If the login name or password is not accepted, a window will pop up with an appropriate error message and the operator may try again.

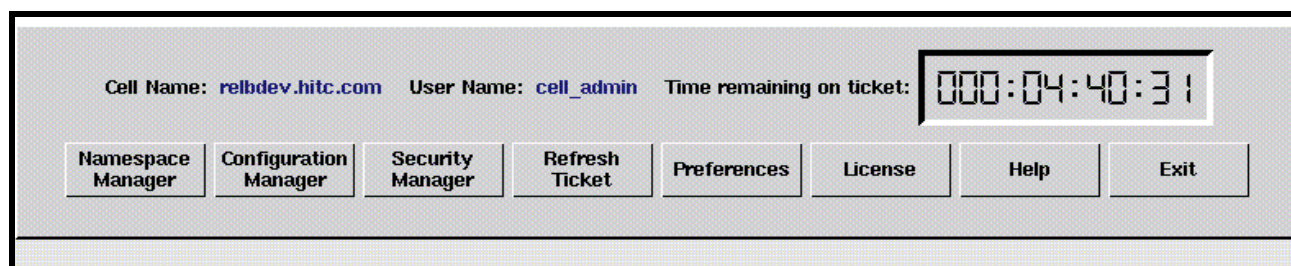


Figure 4.4.1-2. DCE Cell Manager Launcher

The DCE Cell Manager provides the following options:

- The **Namespace Manager** button brings up the Namespace Manager GUI. The initial display of this window is a tree structure with the cell root entries and a first level of directory entries. For more information, see Cell Manager 1.6 Namespace Manager User's Guide.
- The **Configuration Manager** button brings up the Configuration Manager GUI which lists the hosts currently configured in the cell. For more information, Cell Manager 1.6 Configuration Managers User's Guide.
- The **Security Manager** button brings up the Security Manager GUI showing the organizations in the registry and represents the organization domain. For more information, Cell Manager 1.6 Security Manager User's Guide.
- The **Preferences** button brings up the DCE Launcher Preferences GUI. From this GUI additional buttons can be added to the Launcher window for applications commonly used in a DCE management session. Buttons on the DCE Cell Manager Launcher window can also be replaced or deleted. For more information, pages 36 through 39 of the Cell Manager 1.6 Overview and User's Guide.
- The **Refresh Ticket** button brings up a GUI where the DCE password must be entered. It is use to refresh the time remaining on the Authentication Ticket used by the DCE Cell Manager and which is indicated on the upper right box. For more information, see pages 35-36 of the Cell Manager 1.6 Overview and User's Guide.
- The **License** button brings up the Cell Manager License GUI. It is used to view, edit or load the License Agreement purchased. Note, the License can only be viewed or modified by the Super User or Systems Administrator. For more information, see pages 39 through 42 of the Cell Manager 1.6 Overview and User's Guide.
- The **Help** buttons brings up a display with concise information about specific windows, fields, buttons, and other application components.
- The **Exit** button provides options for exiting, including closing the DCE Cell Manager Launcher window.

4.4.1.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for DCE Cell Manager, refer to the ECS Baseline Information System web page, URL

<http://cmdm.east.hitc.com/>.

The document is 914-TDA-058, "DCE Cell Manager Installation and Configuration Report"

4.4.1.4 Databases

None

4.4.1.5 Special Constraints

None

4.4.1.6 Outputs

The DCE Cell Manager provides the option of recording output from any DCE commands and commands executed during a current session of the tool and saving them to a history file. For more information, see “Appendix B: Common Features of DCE Cell Manager Tools”, *Cell Manager 1.6 Overview and User’s Guide*.

4.4.1.7 Event and Error Messages

None

4.4.1.8 Reports

None

4.4.2 TCP Wrappers

TCP Wrappers allow the operator to control access to various network services through the use of access control lists. They also provide logging information of wrapped network services which may be used to prevent or monitor network attacks. It intercepts incoming network connections and verifies if the connection is allowed before passing the connection onto the actual network daemon. TCP Wrappers allows the operator to monitor and filter incoming requests for the systat, finger, ftp, telnet, rlogin, rsh, exec, tftp, talk, and other network services. Full descriptions of these Unix services can be obtained using the “man” command, e.g., man systat. TCP Wrappers perform the following functions automatically:

- **Access control:** access can be controlled per host, per service, or combinations thereof.
- **Host name spoofing:** verifies the client host name that is returned by the address->name DNS server, by asking for a second opinion from a local DNS server.
- **Host address spoofing:** the wrapper programs can give additional protection against hosts that claim to have an address that lies outside their own network.
- **Client username lookups:** the protocol proposed in RFC 931 provides a means to obtain the client user name from the client host. The requirement is that the client host runs an RFC 931-compliant daemon. The information provided by such a daemon is not intended to be used for authentication purposes, but it can provide additional information about the owner of a TCP connection.
- **Multiple ftp/gopher/www archives on one host:** `daemon@host' access control patterns can be used to distinguish requests by the network address that they are aimed at. Judicious use of the `twist' option (see the hosts_options.5 file supplied with TCP Wrappers, `nroff -man' format) can guide the requests to the right server. These can be servers that live in separate chroot areas, or servers modified to take additional context from the command line, or a combination.
- **Sequence number guessing:** client username lookup protocol can help to detect host impersonation attacks. Before accepting a client request, the wrappers can query the client's IDENT server and find out that the client never sent that request.

Additional information on TCP Wrappers can be obtained at the following URL:

<http://www.alw.nih.gov/Security/prog-firewall.html>

TCP Wrappers is used to perform the operator functions listed in Table 4.4.2-1.

Table 4.4.2-1. Common ECS Operator Functions Performed with TCP Wrappers

Operating Function	Command/Action	Description	When and Why to Use
Monitor potentially malicious attempts to access network services.	Check TCP Wrappers log using a text editor.	Program continuously runs in the background appearing to malicious external client service requests as a normal inetd daemon process.	To check for evidence of an attempt of breaking-in.

4.4.2.1 Quick Start Using TCP Wrappers

TCP Wrappers provides a library of tiny daemon wrapper programs. The daemons each correspond to a service provided by the host operating system. The daemons are registered with the service, which results in the operating system invoking the daemon each time that service is invoked. The daemons perform their function(s) and terminate. A common function is to log the name of the client host and requested service. They do not exchange information with client or server applications, and impose no overhead on the actual conversation between the client and server applications. Optional features include: access control to restrict what systems can connect to what network daemons; client user name lookups with the RFC 931 protocol; additional protection against hosts that pretend to have someone else's host name; and additional protection against hosts that pretend to have someone else's host address.

4.4.2.1.1 Command Line Interface

The TCP Wrappers cannot be invoked or accessed from the command line. The TCP Wrapper daemons are invoked by the operating system service to which they are registered. The daemons terminate upon completing their function.

4.4.2.2 TCP Wrapper Main Screen

TCP Wrapper does not have a graphical user interface.

4.4.2.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for AMASS, refer to the ECS Baseline Information System web page, URL <http://cmdm.east.hitc.com/>.

4.4.2.4 Databases

None

4.4.2.5 Special Constraints

None

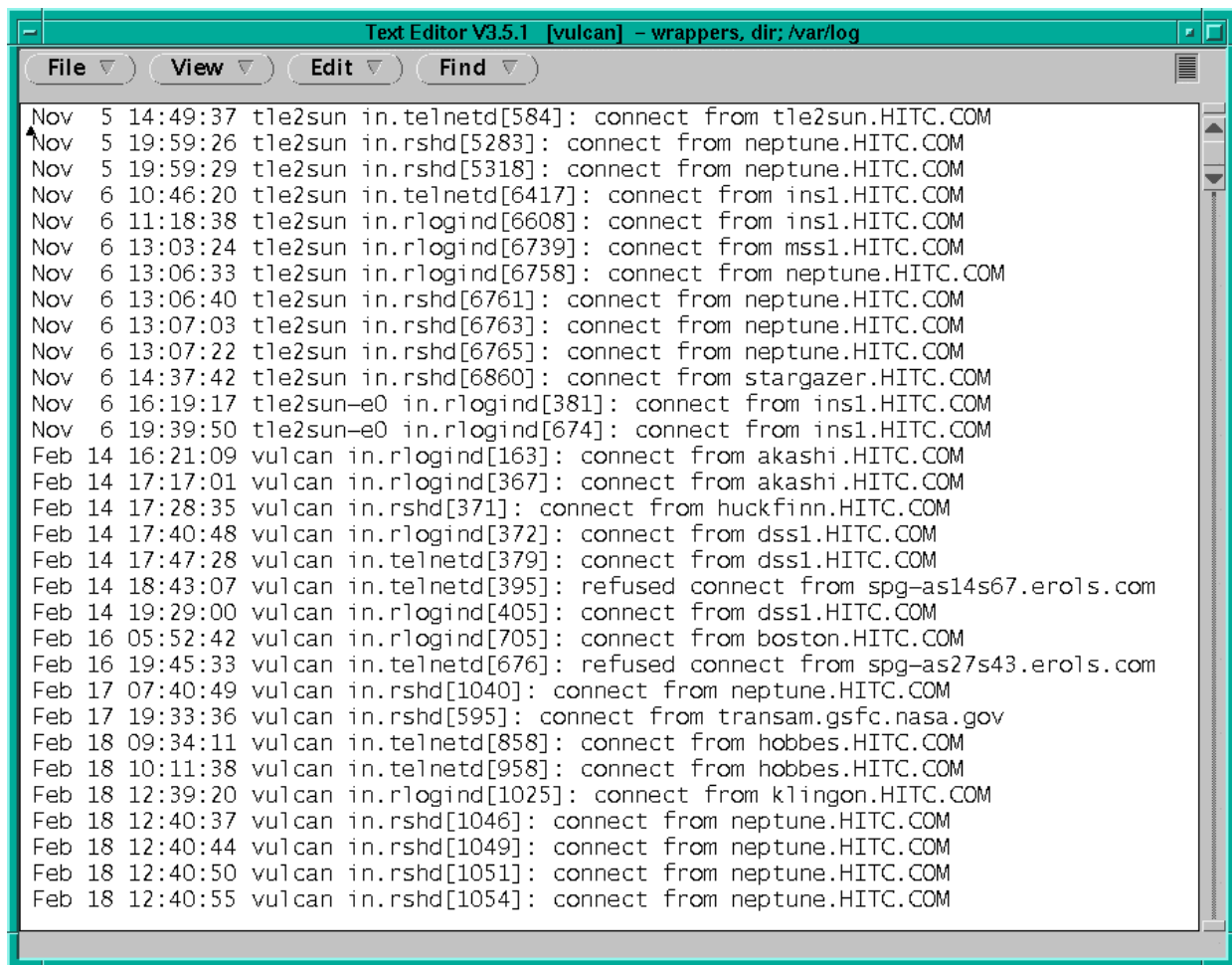
4.4.2.6 Outputs

Table 4.4.2-2 describes TCP Wrappers output.

Table 4.4.2-2. Outputs

Output	Disposition	Description and Format
Event log	The disposition of the wrapper logs is determined by the system configuration file parameter for the system log file name. In the ECS Release 4 Development Environment (host = mss1) the parameter is local3.info and the log file is /etc/syslog.conf.	The Wrapper daemons log the event/service request that caused their invocation. The log provides sufficient information to describe the event/service request and response from the system. Log records are output in ASCII text format, each record containing the following fields: Date Time host Service Response to request Event

Figure 4.4.2.1 shows an example of a log file created by TCP Wrappers. The log file may be examined with available tools like the **vi** editor. The contents of the log file may be used to generate reports on Service Request activity for the host.



```
Nov 5 14:49:37 tle2sun in.telnetd[584]: connect from tle2sun.HITC.COM
Nov 5 19:59:26 tle2sun in.rshd[5283]: connect from neptune.HITC.COM
Nov 5 19:59:29 tle2sun in.rshd[5318]: connect from neptune.HITC.COM
Nov 6 10:46:20 tle2sun in.telnetd[6417]: connect from ins1.HITC.COM
Nov 6 11:18:38 tle2sun in.rlogind[6608]: connect from ins1.HITC.COM
Nov 6 13:03:24 tle2sun in.rlogind[6739]: connect from mss1.HITC.COM
Nov 6 13:06:33 tle2sun in.rlogind[6758]: connect from neptune.HITC.COM
Nov 6 13:06:40 tle2sun in.rshd[6761]: connect from neptune.HITC.COM
Nov 6 13:07:03 tle2sun in.rshd[6763]: connect from neptune.HITC.COM
Nov 6 13:07:22 tle2sun in.rshd[6765]: connect from neptune.HITC.COM
Nov 6 14:37:42 tle2sun in.rshd[6860]: connect from stargazer.HITC.COM
Nov 6 16:19:17 tle2sun-e0 in.rlogind[381]: connect from ins1.HITC.COM
Nov 6 19:39:50 tle2sun-e0 in.rlogind[674]: connect from ins1.HITC.COM
Feb 14 16:21:09 vulcan in.rlogind[163]: connect from akashi.HITC.COM
Feb 14 17:17:01 vulcan in.rlogind[367]: connect from akashi.HITC.COM
Feb 14 17:28:35 vulcan in.rshd[371]: connect from huckfinn.HITC.COM
Feb 14 17:40:48 vulcan in.rlogind[372]: connect from dss1.HITC.COM
Feb 14 17:47:28 vulcan in.telnetd[379]: connect from dss1.HITC.COM
Feb 14 18:43:07 vulcan in.telnetd[395]: refused connect from spg-as14s67.erols.com
Feb 14 19:29:00 vulcan in.rlogind[405]: connect from dss1.HITC.COM
Feb 16 05:52:42 vulcan in.rlogind[705]: connect from boston.HITC.COM
Feb 16 19:45:33 vulcan in.telnetd[676]: refused connect from spg-as27s43.erols.com
Feb 17 07:40:49 vulcan in.rshd[1040]: connect from neptune.HITC.COM
Feb 17 19:33:36 vulcan in.rshd[595]: connect from transam.gsfc.nasa.gov
Feb 18 09:34:11 vulcan in.telnetd[858]: connect from hobbes.HITC.COM
Feb 18 10:11:38 vulcan in.telnetd[958]: connect from hobbes.HITC.COM
Feb 18 12:39:20 vulcan in.rlogind[1025]: connect from klingon.HITC.COM
Feb 18 12:40:37 vulcan in.rshd[1046]: connect from neptune.HITC.COM
Feb 18 12:40:44 vulcan in.rshd[1049]: connect from neptune.HITC.COM
Feb 18 12:40:50 vulcan in.rshd[1051]: connect from neptune.HITC.COM
Feb 18 12:40:55 vulcan in.rshd[1054]: connect from neptune.HITC.COM
```

Figure 4.4.2-1. Example of TCP Wrappers Log

The log file provides the following information for each entry: data and time; host sever name; type of service requested and port that provides that service; answer given to the request connection (connect/refused); client host name.

4.4.2.7 Event and Error Messages

None

4.4.2.8 Reports

None

4.4.3 Crack

Crack is a COTS freeware product used in compliance management. Crack is designed to find standard Unix eight-character Data Encryption Standard (DES) encrypted passwords by standard guessing techniques outlined below. It is flexible, configurable and fast, and able to make use of several networked hosts via the Berkeley rsh program (or similar), where possible.

Crack takes as input a series of password files and source dictionaries. It merges the dictionaries, turns the password files into a sorted list, and generates lists of possible passwords from the merged dictionary or from information gleaned about users from the password file. It does not attempt to remedy the problem of allowing users to have guessable passwords, and it should not be used in place of getting a really good, secure passwd program replacement.

Crack works by making many individual passes over the password entries that are supplied to it. Each pass generates password guesses based upon a sequence of rules, supplied to the program by the user. The rules are specified in a simplistic language in the files `gecos.rules` and `dicts.rules`, to be found in the Scripts directory. The rules are written as a simple string of characters, with one rule to a line. Blank lines, and comment lines beginning with a hash character `#` are ignored. Trailing whitespace is also ignored. The instructions in the rule are followed from left to right, and are applied to the dictionary words one by one, as the words are loaded. Some simple pattern matching primitives are provided for selection purposes, so that if the dictionary word does not match the pattern, it is ignored.

Additional information on Crack can be obtained at the following URL:

<http://www.alw.nih.gov/Security/prog-firewall.html>

Crack is used to perform the operator functions listed in Table 4.4.3-1.

Table 4.4.3-1. Common ECS Operator Functions Performed with Crack

Operating Function	Command	Description	When and Why to Use
Ensure passwords used are not easy to guess.	<code>Crack filename</code>	Scans the password file and makes guesses of passwords.	Regularly review systems for weak passwords.

4.4.3.1 Quick Start Using Crack

For more information on Crack, see the `readme.txt` file in the Docs directory where Crack is installed. The directory where Crack is installed may be found in the ReadMe file described in Section 4.4.3.3, Required Operating Environment.

The documentation of Crack, used as a basis and referenced in this section, is for version 4.1.

4.4.3.1.1 Invoking Crack From the Command Line Interface

To execute Crack from the command line prompt use:

>Crack [*filename*]

Where [*filename*] is the name of the password file.

4.4.3.2 Crack Main Screen

Crack does not have a GUI. Crack output is returned to the command line interface where Crack was started. The Crack startup message and initialization is shown in Figure 4.4.3-1 below.

```
mss2{rsnyder}>71: ypcat passwd > ypfile
mss2{rsnyder}>72: ./Crack -nice 10 ypfile
Crack 4.1f RELEASE, The Password Cracker (c) Alec D.E. Muffett, 1992
Invoked as: ./Crack -nice 10 ypfile
Making dictionary Dicts/bigdict - This may take some time...
touch Dicts/.lockfile
Binary directory: /home/rsnyder/COTS/security/crack_4.1/10
( cd ../Sources ; make clean )
make[1]: Entering directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
rm -f *.o *.u *.a *.pixie *.Addrs *.Counts
rm -f crack-pwc tester bytesex testrule
rm -f speedcrypt speedfcrypt speedxform speedufc
make[1]: Leaving directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
( cd ../Sources ; make crack-pwc.which )
make[1]: Entering directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
Choosing between Crack.fcrypt and Crack.ufc
((../Scripts/do_ufc && make crack-pwc.ufc) || make crack-pwc.fcrypt)
Looking for UFC-crypt in /home/rsnyder/COTS/security/crack_4.1/ufc-crypt
Cannot find /home/rsnyder/COTS/security/crack_4.1/ufc-crypt - cannot use UFC-cry
pt on this platform
make[2]: Entering directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
cc -O -c crack-lib.c -o crack-lib.o
cc -O -c crack-glob.c -o crack-glob.o
cc -O -c crack-supp.c -o crack-supp.o
cc -O -c crack-sort.c -o crack-sort.o
cc -O -c bytesex.c -o bytesex.o
"bytesex.c", line 19: warning: shift count negative or too big: <= 32
cc -O -o bytesex bytesex.o
cc -O `./bytesex` -c crack-fcrypt.c
cc -O -c crack-pwc.c -o crack-pwc.o
"crack-pwc.c", line 1103: warning: argument #2 is incompatible with prototype:
    prototype: pointer to function(int) returning void : "/usr/include/signa
l.h", line 37
    argument : pointer to function(void) returning void
cc -O -o crack-pwc crack-pwc.o crack-lib.o crack-glob.o crack-supp.o crack-sort.
o crack-fcrypt.o
make[2]: Leaving directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
make[1]: Leaving directory `/home/rsnyder/COTS/security/crack_4.1/Sources'
cp ../Sources/crack-pwc .
Sorting data for Crack.
Flags: -nice -i /tmp/pw.24133 Dicts/bigdict
Running program in background
Output will be written to a file in directory /home/rsnyder/COTS/security/crack_
4.1
named 'out<something>'
mss2{rsnyder}>73: █
```

Figure 4.4.3-1. Xterm window of Crack startup message and initialization

4.4.3.3 Required Operating Environment

Crack can run on any ECS platform. However, due to the possibility of security breaches and the high overhead in using the tool, it is implemented on only a few select machines.

Additional information regarding Crack is stored in a CM controlled ReadMe file. To find the ReadMe file for Crack, use the XRP Baseline Manager to determine where in ClearCase the ReadMe file resides.

4.4.3.4 Databases

The source dictionaries used by Crack are gecos.rules and dicts.rules. These files will be maintained at the SMC and updates periodically forwarded to the DAACs. Instructions for updating these files are included in the Crack Readme file that is located in the Crack directory.

4.4.3.5 Special Constraints

None

4.4.3.6 Outputs

Table 4.4.3-2 describes the output for Crack.

Table 4.4.3-2. Outputs

Output	Description and Format
Notification of a person's user id and password used to get into the system	The results of running Crack are written to the file specified when Crack is invoked and can be shown on the screen in ASCII format

4.4.3.7 Event and Error Messages

None

4.4.3.8 Reports

Crack 4.1 does not support reports.

4.4.4 SATAN

The Security Administrator Tool for Analyzing Networks (SATAN) is a COTS freeware product used for security compliance management. The tool is used to evaluate DAAC components for common security deficiencies and provide recommendations to enhance security.

SATAN gathers information about specified hosts and networks by examining network services (for example, finger, NFS, NIS, ftp, and rexd). It can then report this data in a summary format or, with a simple rule-based system, investigate potential security problems. Problems are described briefly and pointers provided to patches or workarounds. In addition to reporting vulnerabilities, SATAN gathers general network information (network topology, network services run, types of hardware and software being used on the network). SATAN has an exploratory mode that allows it to probe hosts that have not been explicitly specified. Thus, SATAN can probe not only targeted hosts, but also hosts outside your administrative domain.

SATAN is used to perform the operator functions listed in Table 4.4.4-1.

Table 4.4.4-1. Common ECS Operator Functions Performed with SATAN

Operating Function	Command	Description	When and Why to Use
Check systems for security leaks/holes	<code>satan machinename</code>	Checks NFS export to unprivileged programs. Checks NFS export via portmapper. Checks Unrestricted NFS export. Checks NIS password file access. Checks rexd access. Checks Sendmail vulnerabilities. Checks TFTP file access. Checks Remote shell access. Checks Unrestricted X server access. Checks Writable FTP home directory. Checks wu-ftpd vulnerability.	Whenever a security event has been detected or on a scheduled basis.

4.4.4.1 Quick Start Using SATAN

To execute SATAN from the command line prompt, enter:

```
>satan
```

The SATAN home page is shown in Figure 4.4.4-1 below.

The SATAN home page is also the GUI used by SATAN to communicate with the operator. When SATAN initializes, it starts its own local web server. Operators can then use Netscape (See Netscape Navigator, Section 4.12.5) to interact with the program. The URL for SATAN is provided in the ReadMe file (See Required Operating Environment, Section 4.4.4.3 below).

Additional information regarding SATAN is available from the link on the home page and the SATAN help files.

The documentation of SATAN used as a basis and referenced in this section is for version 1.1.1. Additional information on SATAN can be obtained at the following URL:

<http://www.alw.nih.gov/Security/prog-network.html>

This command launches an Xterm window with the SATAN startup message shown in Figure 4.4.4-1 below.



Figure 4.4.4-1. Xterm window of SATAN showing startup message

After SATAN starts, the operator may use Netscape Navigator to communicate with the program through ECS SATAN home page (see Figure 4.4.4-2 below).

4.4.4.2 SATAN Main Screen

After the SATAN startup message shown in Figure 4.4.4-1 is displayed the SATAN home page (Figure 4.4.4-2) is available from the local web server. The operator may access on-line help for all SATAN functions using the SATAN Documentation link.

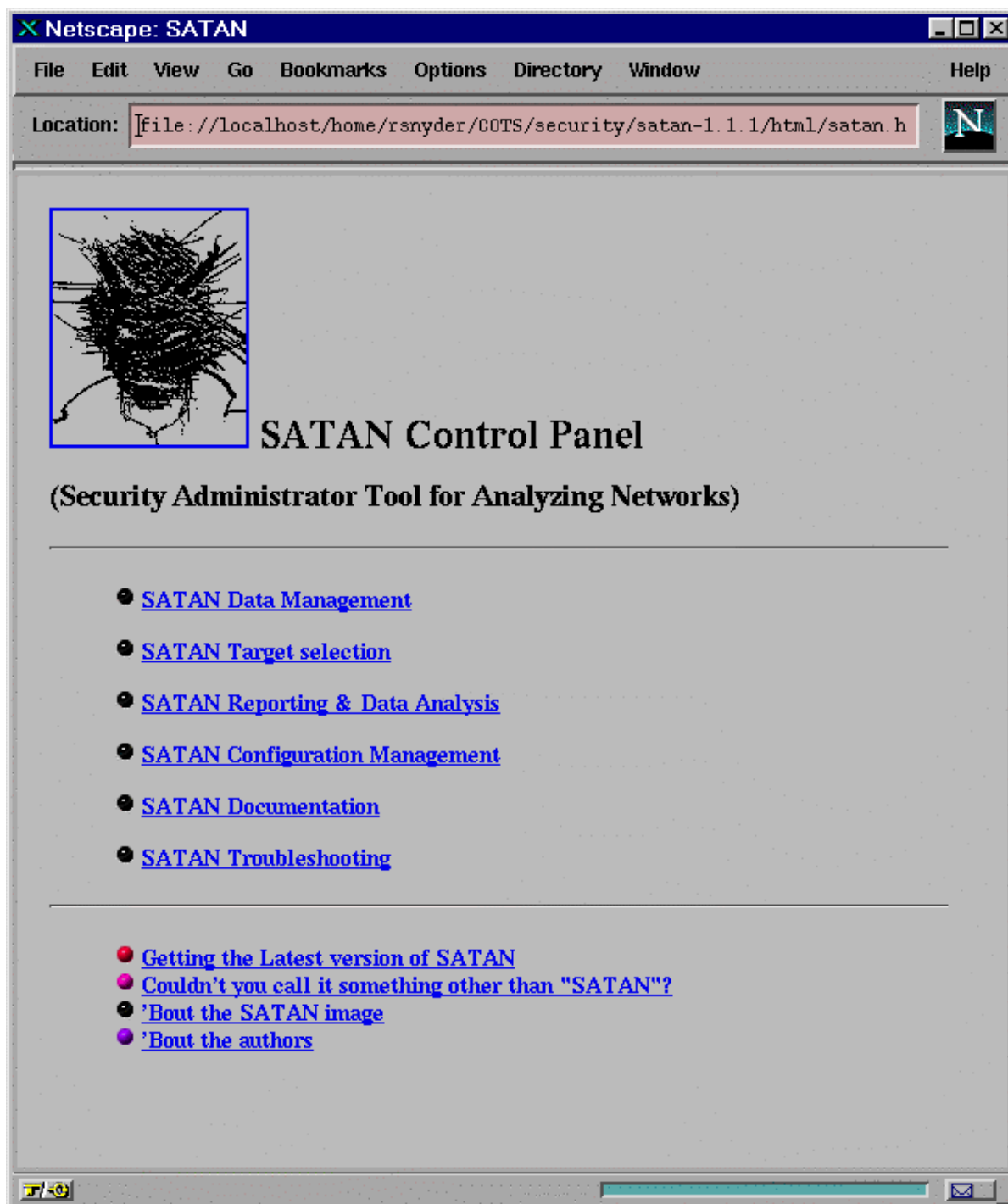


Figure 4.4.4-2. SATAN web home page

4.4.4.3 Required Operating Environment

SATAN requires UNIX. SATAN can run on the following platforms: HP J210, Sun Sparc 20/50, and Sun Sparc 20/71. However, due to the potential for security breaches with uncontrolled use, it is implemented on a few select machines.

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for SATAN, refer to the ECS Baseline Information System web page, URL <http://cmdm.east.hitc.com/>.

4.4.4.4 Databases

The table of common deficiencies used by SATAN is proprietary. This table provides the specific tests SATAN uses to determine “deficiencies”. Modifications to this table are discussed in the on-line documentation available through the SATAN home page (Figure 4.4.4-2).

4.4.4.5 Special Constraints

The amount of memory that SATAN uses can be large, depending on how many hosts are being scanned in or are in the database, so it should be run at off-peak hours.

4.4.4.6 Outputs

SATAN outputs are available using the “SATAN Reporting & Data Analysis” selection on the SATAN home page (Figure 4.4.4-2).

4.4.4.7 Event and Error Messages

None.

4.4.4.8 Reports

See Section 4.4.4.6 above.

4.4.5 Tripwire

Tripwire is an intrusion detection tool that aids system administrators and users in monitoring a designated set of files for any changes. File systems may be altered without authorization in a number of ways, including an intruder, an authorized user violating a DAAC policy, or malicious code-altering system executables as others are run. Using Tripwire, unauthorized changes are tracked in a very short amount of time.

Tripwire automates the creation of input lists and output lists of files. Tripwire uses the file `tw.config` to maintain the list of tested files. File attributes such as file size, ownership, inode number, inode values and timestamps are compared between the input and output lists. For each file, Tripwire computes a digital signature which is a fixed-sized output generated by a signature function whose input is an arbitrary file. If the contents of a file are changed in any way, then the signature will also change. One of the signature functions is to test for the integrity of a file system by generating checksums of files and comparing them with a previously generated database of checksums. Added or deleted files are flagged and reported, as are any files that have changed from their previously recorded state in the database. When run against system files on a regular basis, any file changes would be spotted when Tripwire is next run, giving system administrators information to enact damage control measures immediately.

Tripwire uses message-digest algorithms (one-way hash functions) to detect changes in a hard-to-spoof manner. This will be able to detect significant changes to critical files, including those caused by insertion of backdoor traps or viruses. Tripwire also monitors changes to file permissions, modification times, and other significant changes to inodes as selected by the system administrator on a per file/directory basis. Tripwire performs the following functions automatically:

- **Database Generation** -- Tripwire initializes the database based upon the entries enumerated in the `tw.config` file.
- **Database Update** -- Provides incremental database update functionality on a per-file/directory basis. This obviates having to regenerate the entire database every time a file or set of files change.
- **Integrity Checking** -- Generates a report of added, deleted, or changed files, comparing all the files described by the `tw.config` file against the files residing on the file system.
- **Interactive Update** -- Reports added, deleted, and changed files and prompts the user whether those database entries should be updated. The Interactive Update provides a method for system administrators to keep Tripwire databases ``in sync" with file systems that change.

Tripwire is used to perform the operator functions listed in Table 4.4.5-1.

Table 4.4.5-1. Common ECS Operator Functions Performed with SATAN

Operating Function	Command	Description	When and Why to Use
Change the configuration file.	Edit the specific configuration file using the vi editor.	Specify which file(s) should be monitored.	When another file needs to be monitored. Checks the integrity of the file system specified when the daemon is started.
Compare file signatures with database.	Done by Tripwire "chron" run periodically.	Compares files' current signatures against the database and emails the operator a notification for changed files.	This activity is a continuous, periodic performed on a configured interval by the "chron" run.
Update the signatures datastore.	Done manually in response to "Interactive Update" prompts.	Updates the signature data store when the email notification discloses legitimate changes.	As necessary to maintain a valid data store of signatures.

4.4.5.1 Quick Start Using Tripwire

The following command is used to execute Tripwire from the command line prompt:

/etc/tripwire-1.2/src/tripwire -v > {filename}

The following is the general syntax of executing Tripwire

tripwire [options ...] >filename

Where **options** are:

-initialize	Database Generation mode -init
-update entry	update entry (a file, directory, or tw.config entry) in the database
-interactive	Integrity Checking mode with Interactive entry updating
-loosedir	use looser checking rules for directories
-d dbasefile	read in database from dbasefile (use '-d -' to read from stdin)
-c configfile	read in config file from configfile (use '-c -' to read from stdin)
-cfd fd	read in config file from specified fd
-dfd fd	read in the database file from specified fd
-Dvar=value	define a tw.config variable (ala @@define)
-Uvar	undefine a tw.config variable (ala @@undef)
-i # or -i all	ignore the specified signature (to reduce execution time)
-q	quiet mode
-v	verbose mode
-preprocess	print out preprocessed configuration file
-E	save as -preprocess
-help	print out interpretation help message
-version	print version and patch information

filename is a complete filename (including path) for the output report file.

Tripwire is automatically invoked on all machines by a "chron" run which periodically executes Tripwire. The operator receives information from Tripwire by email for files whose current

signature does not match the datastore signature. The operator must verify the file changes and update the datastore or report a security violation. Tripwire may be run manually to update the datastore or create reports. The Operator can also generate Tripwire reports via the command line in the Xterm.

Additional information on Tripwire can be obtained at the following URL:

<http://www.alw.nih.gov/Security/prog-monitor.html>

The documentation of Tripwire, used as a basis and referenced in this section, is for version 1.2.

The differences between the behavior of Tripwire started from the “Chron” run and started by the operator result from the use of appropriate parameters on the start command. These parameters are listed and explained below.

4.4.5.2 Tripwire Main Screen

Tripwire does not have a GUI. The Tripwire startup message is shown in Figure 4.4.5-1.

```

X mss2
mss2{rsnyder}162: ./tripwire -i 1 -i 2
### Phase 1:  Reading configuration file
### Phase 2:  Generating file list
### Phase 3:  Creating file information database
### Phase 4:  Searching for inconsistencies
###
###                Total files scanned:           2867
###                Files added:                   0
###                Files deleted:                  0
###                Files changed:                  2677
###
###                After applying rules:
###                Changes discarded:              2675
###                Changes remaining:              2
###
changed: -rw----- rsnyder    499198 Apr 23 11:09:42 1998 /home/rsnyder/COTS/se
curity/tripwire-1.2/src/databases/tw.db_mss2
changed: -rwxr-xr-x rsnyder    4725 Apr 23 11:11:09 1998 /home/rsnyder/.cshrc
### Phase 5:  Generating observed/expected pairs for changed files
###
### Attr      Observed (what it is)      Expected (what it should be)
### =====
/home/rsnyder/COTS/security/tripwire-1.2/src/databases/tw.db_mss2
    st_size: 499198                      483328
    st_mtime: Thu Apr 23 11:09:42 1998    Thu Apr 23 11:09:36 1998
    st_ctime: Thu Apr 23 11:09:42 1998    Thu Apr 23 11:09:36 1998

/home/rsnyder/.cshrc
    st_mtime: Thu Apr 23 11:11:09 1998    Tue Apr 21 10:08:39 1998
    st_ctime: Thu Apr 23 11:11:09 1998    Tue Apr 21 10:08:39 1998

mss2{rsnyder}163: █

```

Figure 4.4.5-1. Xterm Window with Tripwire Showing Tripwire Startup Message.

4.4.5.3 Required Operating Environment

Tripwire runs on all Sun, SGI, and HP servers.

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for Tripwire, refer to the ECS Baseline Information System web page, URL <http://cmdm.east.hitc.com/>.

4.4.5.4 Databases

Tripwire uses an internal datastore of captured information. The user can update this datastore through the command line interface. Reporting information based on the information which Tripwire has gathered and placed in this datastore is emailed to the operator.

4.4.5.5 Special Constraints

None.

4.4.5.6 Outputs

Tripwire generates the outputs presented in Table 4.4.5-2 below in the filename specified on the command line invocation. A sample of the generated report is shown in section 4.4.5.8.

Table 4.4.5-2. Tripwire Outputs

Output	Description and Format
Tripwire compares the new datastore with the existing Tripwire datastore stored on the file system, reporting added or deleted files, as well as those files that have changed.	See 4.4.5.8, the Report section, for a sample of Tripwire output.
Email to the operator.	Email messages list the files examined by Tripwire whose current signature does not match the file's entry in the signature file.
Updates to the Tripwire datastore.	The operator must review the email mentioned above and determine whether it represents a data corruption problem or that the Tripwire signature datastore is out-of-date. If the determination is that the datastore is out of date the operator must use Tripwire with the interactive update option and update the signature file.
Security problem notification	If the operator determines the Tripwire email indicates a security violation the operator must log the problem.

4.4.5.7 Event and Error Messages

None

4.4.5.8 Reports

Tripwire must be started from the command line interface to request the Tripwire report. A sample of Tripwire output is shown below in Figure 4.4.5-2.

```

2:30am (mentor) 985 % Tripwire
### Phase 1: Reading configuration file
### Phase 2: Generating file list
### Phase 3: Creating file information database
### Phase 4: Searching for inconsistencies
###
###          Total files scanned:      82
###          Files added:              0
###          Files deleted:            0
###          Files changed:            80
###
###          After applying rules:
###          Changes discarded:        79
###          Changes remaining:        1
###
changed: -rw----- genek 4433 Oct 13 02:30:34 1992 /tmp/genek/Tripwire-0.92/config.h
### Phase 5: Generating observed/expected pairs for changed files
###
### Attr      Observed (what it is)      Expected (what it should be)
### =====
/tmp/genek/Tripwire-0.92/config.h
st size: 4441          4433
md5 (sig1): 0aqL1O06C3Fj1YBXz3.CPdcb    0cPX1H.DYS.s1vZdKD.ELMDR
snfru (sig2): 0PcgcK/MZvEm.8pIWe.Gbnn/    /8VoJv1JcoUA0NvoGN.k3P6E
crc32 (sig3): .EHA6x                      /OuGNV
crc16 (sig4): ...9/q                      ...6yu
md4 (sig5): /hQ0sU.UEbJo.UR4VZ/mNG/h      .UR4VZ/mNG/h/VSG/W/Z643k
md2 (sig6): .hLwjb.VRA0O.Z72y90xTYqA     1LR0Gg1l.vqB0.1g330Pi8/p

```

Figure 4.4.5-2. Tripwire Report

4.4.6 Tivoli Enterprise Console and Administration

Tivoli Enterprise Console (TEC) and Tivoli Admin are used by DAAC operators to perform security functions. This section refers to TEC and Tivoli Admin to represent either themselves, Tivoli Management Platform, or the TME Desktop. For additional information about Tivoli, see Section 4.2.2, Tivoli, and Section 4.3.5, Tivoli/Courier.

The TEC is used to collect and monitor security events. Through the TEC the operator is able to monitor a users successful/unsuccessful login attempt, a successful/unsuccessful DCE login attempt, file access denial, number of unsuccessful login attempts, etc. TEC refers to the collection of capabilities that can be performed on managed objects. There is no specific graphic or visualization of “The Tivoli Enterprise Console”. For more information, see the *Tivoli Enterprise Console Event Adapter Guide* and the *Tivoli Enterprise Console User’s Guide*.

The Tivoli Desktop is used to provide access and permissions to various applications. Tivoli provides the ability to create a unique desktop for each user. Thus enabling each user to have a unique set of available applications.

The Tivoli Admin is used for the management/creation of UNIX accounts, UNIX Groups, and host mappings. The Tivoli Admin GUI (the Tivoli Main Screen, Figure 4.4.6-1) provides the ability to create a DCE account and map the user to their assigned roles. For more information, see the *Tivoli User and Group Management Guide* and the *Tivoli Host Management Guide*.

The most frequently used Enterprise Console and Tivoli Admin functions are listed in Table 4.4.6-1.

Table 4.4.6-1. Common ECS Operator Functions Performed with Tivoli Admin and TEC

Operating Function	Command/Script or GUI	Description	When and Why to Use
Create Event Console.	Series of GUIs.	Create an event console.	Use to allow the operator to view selected events that are received by the Event Server.
Create user account.	Series of GUIs.	Create a definition of a new user.	Use when there is a new user account to be created.
Manage NIS maps.	Series of GUIs.	Distribute software files.	Use to distribute software to specified hosts.
Manage Unix host.	Series of GUIs.	Allows centralized administration of a Tivoli managed host.	Use to check the status of a host or to modify certain parameters.
View Event.	GUI	View an event displayed in the Event Console.	To obtain more detailed information concerning an event in the Event Console.

4.4.6.1 Quick Start Using Tivoli Admin

This section presents an orientation of Tivoli Admin. The underlying assumptions are that:

- Tivoli and Tivoli Admin has been installed on all of the platforms that is involved in the administration process
- The user has been granted administrator privileges for Tivoli Admin activity.

The documentation of Tivoli used as a basis and referenced in this section is for version/release 3.0.1, contained in the ECS Release 4.

4.4.6.1.1 Invoking Tivoli Admin and Tivoli Enterprise Console from the Command Line Interface

Both Tivoli Admin and Tivoli Event Console are started from the main Tivoli GUI. The icons for each specific application is described in detail in later sections of this document.

To execute Tivoli from the command line prompt use:

```
source /etc/Tivoli/setup_env.csh (in c shell)
. /etc/Tivoli/setup_env.sh (in Bourne or bash shell)
tivoli -font fixed
```

4.4.6.2 Tivoli Main Screen

The Main Screen as shown in Figure 4.4.6-1 facilitates software distribution activities through a series of icons and dialogs. The top part of the screen holds the icons needed to initiate the activities, and the bottom part will display the type of process and the results of the process that is initiated.

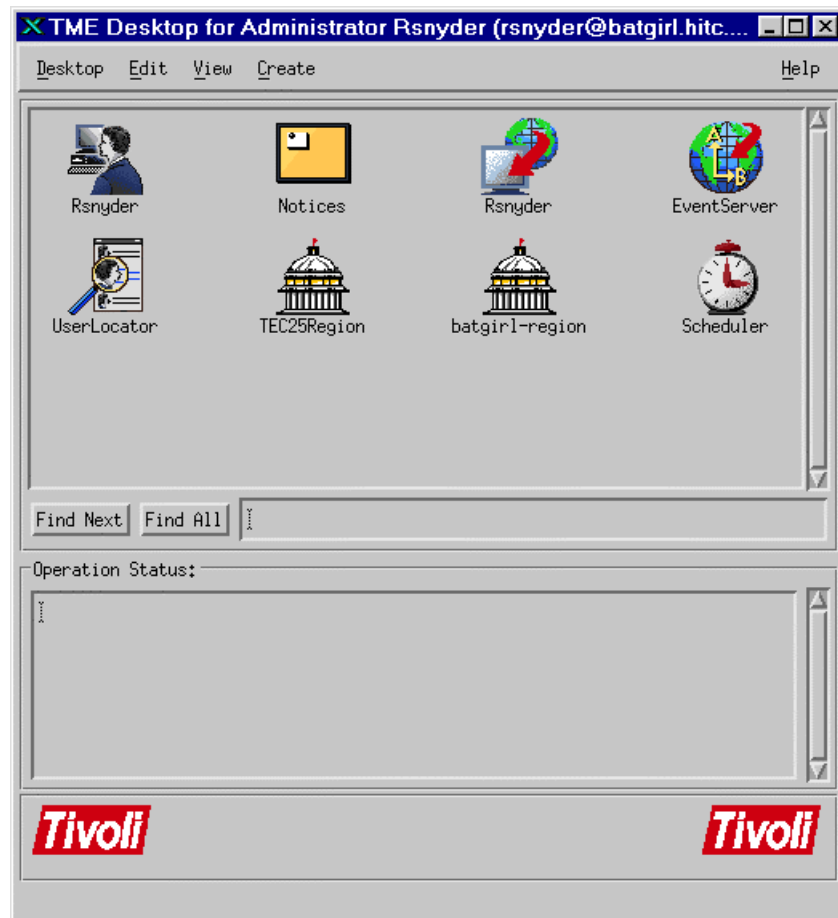


Figure 4.4.6-1. Tivoli Main Screen

4.4.6.3 Required Operating Environment

Tivoli Admin and Tivoli Event Console require a UNIX platform that serves as the Tivoli Managed Region Server and as the Tivoli Event Server. The Tivoli Managed Nodes can be UNIX platforms or PC's. ECS Tivoli managed nodes consists of Sun hosts (Solaris 2.5.1 OS), Hewlett Packard hosts (HP 10.0.1 OS), and SGI (SGI Irix 6.2) hosts.

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled ReadMe file for each product. To find the ReadMe file for Tivoli Admin and Tivoli/Enterprise Console, use the XRP Baseline Manager to determine where in ClearCase the ReadMe file resides.

4.4.6.4 Databases

Tivoli uses two databases, a Sybase database and a Tivoli proprietary database. Operators are unable to directly access any of the information contained within them.

4.4.6.5 Special Constraints

The operator must be a Tivoli Administrator to create the regions and associated components.

4.4.6.6 Outputs

Output from Tivoli is displayed on the screen in the form of its GUIs or a log entry (discussed in Section 4.4.6.7).

4.4.6.7 Event and Error Messages

All event and summary error messages are displayed in the Operation Status box within the main screen (Figure 4.4.6-1). Certain error messages may also appear on the Xterm console that was used to start Tivoli.

4.4.6.8 Reports

None.

4.4.7 Cryptographic Management Interface (CMI)

The Cryptographic Management Interface (CMI) GUI program, *EcSeAuthnProg*, is used by operations personnel to generate a randomized username and password (though only the password is currently used) given a key. There is one key for each ECS server and is the same as the Program ID stored in a server's configuration file. This tool is most often used to generate passwords for Sybase and FTP user accounts. It is therefore recommended that access to this tool is restricted to Sybase and Unix System Administrators only.

CMI is used to perform the operator functions listed in Table 4.4.7-1.

Table 4.4.7-1. Common ECS Operator Functions Performed with CMI

Operating Function	Command / GUI	Description	When and Why to Use
Start CMI program.	<i>EcSeAuthnProg</i>	This will bring up the <i>ConnectAuth</i> GUI.	In order to obtain the user password for a given application key.
Generate password.	<i>CMI Main Screen (ConnectAuth GUI)</i>	This will cause the program to generate a randomized username and password.	This is only needed when a new user account is required by an ECS server.

4.4.7.1 Quick Start Using CMI

The CMI is a custom developed GUI utility and should be used only by operations personnel.

To execute CMI from the command line prompt, enter:

> **EcSeAuthnProg**

Refer to the 920-TDx-013 "Custom Code Configuration Parameters" documentation series for a listing of **EcSeAuthnProg**. **There are no configuration parameters for EcSeAuthnProg!**

4.4.7.2 CMI Main Screen

Figure 4.4.7-1 is the CMI GUI Screen which comes up when the CMI program is run. It contains three fields:

- Application Key field
- User Id field
- Password field

Operations personnel fill out the first field with the application key. In response, CMI will return a user name and password which are displayed in the associated fields.

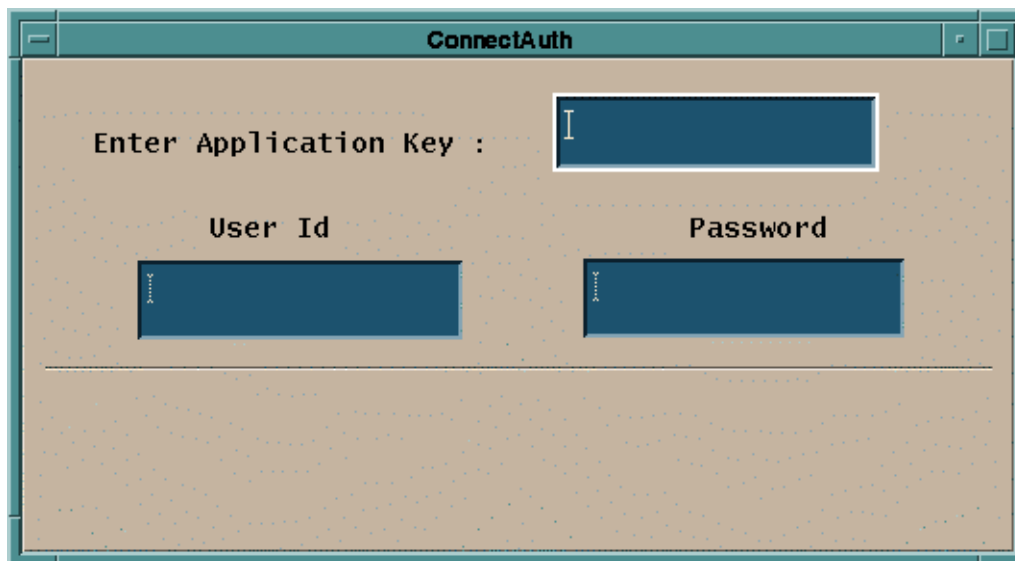


Figure 4.4.7-1. CMI Main Screen

The Table 4.4.7-2 below describes all the fields found in the CMI Screen in Figure 4.4.7-1.

Table 4.4.7-2. CMI Field Descriptions

Field Name	Data Type	Size	Entry	Description
Application Key	Integer	1 to 10 digits	Required	Key that identifies an application.
User Id	Character	8	Generated by <i>EcSeAuthnProg</i> program	Displays the randomized user id based on the key (this field is not used).
Password	Character	8	Generated by <i>EcSeAuthnProg</i> program	Displays the password to be used when creating the account.

4.4.7.3 Required Operating Environment

The EcSeAuthnProg depends on a data file which must be called “data” and must exist in the directory from which the tool is invoked. The data file is the same file as the EcSeRandomDataFile located in **\$ECS_HOME/<mode>/CUSTOM/security**, only with a different name. CMI requires no other configuration files. The program must be run on a Sun platform.

For further information on CMI refer to the 920-TDx-013 “Custom Code Configuration Parameters” documentation series. The “x” refers to the installed location, e.g. 920-TDG-013 is for GSFC DAAC. Note, there are no configurable or tunable parameters or environment variables of CMI.

4.4.7.3.1 Interfaces and Data Types

CMI utilizes no special data types or interfaces.

4.4.7.4 Databases

None.

4.4.7.5 Special Constraints

A data file called “**data**” must exist in the execution directory. The data file must be the same file as the EcSeRandomDataFile.

4.4.7.6 Outputs

All information is displayed on the CMI screen.

4.4.7.7 Event and Error Messages

The CMI program issues error messages which are listed in Appendix A.

4.4.7.8 Reports

None.

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